THE PETTY PAPERS

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Some unpublished
writings of
SIR WILLIAM PETTY
from
the BOWOOD Papers

* * *

Edited by
THE MARQUIS OF
LANSDOWNE

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THE PETTY PAPERS

"My singular friend . . . a person of an admirable inventive head and practical parts. . . . Since his death I have seen in his closet a great many tractatiuncli in MS."

AUBREY, *Brief Lives*, 1898, vol. ii, 146.

Sir William Petty

from a miniature by Samuel Cooper

Emery Walker ph. sc.

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Some unpublished writings
of
SIR WILLIAM PETTY

Edited from the Bowood Papers
by the
MARQUIS OF LANSDOWNE

IN TWO VOLUMES
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INTRODUCTION

THE story of Sir William Petty—by turns cabin boy, hawker of sham jewellery, seaman, inventor, physician, Fellow and Vice-Principal of Brasenose, Professor of Anatomy at Oxford, and of Music at Gresham College, Surveyor, Member of Parliament, landed proprietor, philosopher, statistician and political economist—has been told by Lord Fitzmaurice.[1] More recently Petty's economic writings have been reprinted under one cover, with the addition of valuable editorial matter, by Professor Hull of Cornell University.[2] I shall not attempt within the limits of this Introduction to traverse the biographical ground covered in these works, but in order that my readers may see the sequence of Petty's general activities in relation to his writings, I have printed below a short summary of the principal events in his career with the dates when they occurred.

For an appreciation of Petty's life and character there can be no better authority than his friend and contemporary John Evelyn. It is given in the well-known Diary, under date 22nd March 1675 :

"Supp'd at Sir William Petty's with the Bishop of Salisbury and diverse honorable persons. We had a noble entertainment in a house gloriously furnishd ; the master and mistress of it were extraordinary persons.

"Sir William was the sonn of a meane man somewhere in Sussex,[1] and sent from schole to Oxon, where he studied Philosophy, but was most eminent in Mathematics and Mechanics. Proceeded Doctor of Physick, and was grown famous, as for his learning, so for his recovering a poor wench that had been hanged for felony; and her body having been begged (as the custome is) for the anatomic lecture, he bled her, put her to bed with a warm woman, and with spirits and other meanes restor'd her to life. The young scholars joyn'd and made a little portion, and married her to a man who had severell children by her; she living 15 yeares after, as I have been assur'd.

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[1] *Life of Sir William Petty*, John Murray, 1895.

[2] *The Economic Writings of Sir William Petty*, Cambridge University Press, 1899.

"Sir William came from Oxon to be tutor to a neighbour of mine; thence, when the rebells were dividing their conquests in Ireland, he was employ'd by them to measure and set out the land, which he did on an easy contract, so much per acre. This he effected so exactly, that it not only furnish'd him with a greate sum of money, but enabled him to purchase an estate worth £4,000 a yeare. He afterwards married the daughter of Sir Hardresse Waller; she was an extraordinary witt, as well as beauty, and a prudent woman.

"Sir William, amongst other inventions, was author of the double-bottom'd ship which perish'd, and he was censur'd for rashness, being lost in the Bay of Biscay in a storme when, I think, 15 other vessells miscarried. This vessell was flat-bottom'd, of exceeding use to put into shallow ports, and ride over small depths of water. It consisted of 2 distinct keeles crampt together with huge timbers &c., so as that a violent streame ran betweene; it bare a monstrous broadside, and he still persists that it is practicable and of exceeding use; and he has often told me he would adventure himselfe in such another, could he procure sailors, and his Majesty's permission to make a second Experiment, which name the King gave the vessell at the launching.

---

[1] *Sic*, but Petty's place of origin was Romsey, in Hampshire.

"The Map of Ireland made by Sir William Petty is believed to be the most exact that ever yet was made of any country. He did promise to publish it: and I am told it has cost him neare £1000 to have it engrav'd at Amsterdam.

"There is not a better Latine poet living, when he gives himself that diversion, nor is his excellence less in Council and prudent matters of state: but he is so exceeding nice in sifting and examining all possible contingencies, that he adventures at nothing which is not demonstration. There were not in the whole world his equal for a superintendent of manufacture and improvement of trade, or to govern a plantation. If I were a Prince, I should make him my second Counsellor at least. There is nothing difficult to him. He is besides courageous, on which account I cannot but note a true storie of him, that when Sir Aleyn Brodrick sent him a challenge upon a difference 'twixt them in Ireland, Sir William, tho' exceedingly purblind, accepted the challenge, and it being his part to propound the weapon, desir'd his antagonist to meete him with a hatchet or axe in a dark cellar, which the other of course refused.

"Sir William was, with all this, facetious and of easy conversation, friendly and courteous, and had such a faculty of imitating others, that he would take a text and preach, now like a grave orthodox divine, then falling into the Presbyterian way, then to the phanatical, the quaker, the monk and frier, the Popish priest; with such admirable action, and alteration of voice and tone, as it was not possible to abstain from wonder, and one would sweare to heare severall persons, or forbear to think he was not in good earnest an enthusiast and almost beside himselfe. Then he would fall out of it into a serious discourse; but it was very rarely he could be prevailed on to oblige the company with this faculty, and that only amongst most intimate friends. My Lord Duke of Ormond once obtain'd it of him, and was almost ravish'd with admiration; but by and by he fell on a serious reprimand of the faults and miscarriages of some Princes and Governors, which tho' he named none, did so sensibly touch the Duke, who was then Lieutenant of Ireland, that he began to be very uneasy, and wish'd the spirit lay'd which he had rais'd; for he was neither able to endure such truthes, nor could he but be delighted. At last he melted his discourse to a ridiculous subject, and came down from the joint stoole on which he had stood; but my lord would not have him preach any more. He never could get favour at Court, because he outwitted all the projectors that came neare him.

"Having never known such another genius, I cannot but mention these particulars amongst a multitude of others which I could produce. When I, who knew him in mean circumstances, have ben in his splendid palace, he would himselfe be in admiration how he arriv'd at it; nor was it his value or inclination for splendid furniture and the curiosities of the age, but his elegant lady could endure nothing meane, or that was not magnificent. He was very negligent himselfe, and rather so of his person, and of a philosophic temper. 'What a to-do is here!' would he say. 'I can lie in straw with as much satisfaction.'

"He is author of the ingenious deductions from the Bills of Mortality, which go under the name of Mr. Graunt; also of that useful discourse of the manufacture of wool, and several others in the register of the Royal Society. He was also author of that paraphrase on the 104th Psalm in Latin verse, which goes about in M.S. and is inimitable. In a word there is nothing impenetrable to him."

The subject of the foregoing extract is probably most generally remembered to-day as the author of the Down Survey of Ireland—so called because it was the first Survey of that country set ‘ down ’ in the form of maps. This undertaking would have been a notable one in any circumstances. It was the more remarkable from the rapidity with which it was carried out in a country devastated and depopulated by more than ten years’ continuous fighting, as also by the accuracy of its results, which remained virtually unchallenged until the establishment of the Ordnance Survey. To readers of history the most interesting aspect of the Survey lies perhaps in the fact that it formed the foundation for the ‘ plantation ’ of Ireland by the ‘ Adventurers ’ and by Cromwell’s soldiers. Without it indeed the Cromwellian ‘ Settlement,’ with all which that phrase has since connoted, could hardly have taken place.

But Petty’s true claim to renown rests on a more lasting foundation than the authorship of the Down Survey, which was only an incident in his strange and varied career. He was the first to attempt the systematic collection of social facts and figures and to base upon them deductions both political and economical. He was thus the real founder and inventor of the science of Statistics, and in a more limited sense he may be said to have been the originator of that of Political Economy. The proof of his work has hitherto rested on his published writings. It can now be reinforced by the evidence of those which have hitherto remained unpublished, almost all of which reveal in one form or another, his constant pursuit of the statistical method.

With his published works, which, as mentioned above, have been admirably edited by Professor Hull, we are not immediately concerned. I have however printed at the end of this work (Appendix, vol. ii, 285), for purposes of reference, a list of them with their dates of publication as given in Hull's *Bibliography*.

The unpublished writings, of which these volumes contain a small selection only, are numerous and cover an extraordinary range of subjects. From his earliest days it was Petty's habit when faced with a new problem " to meditate and fill a quire with all that could in nature be objected, and to write down his answers to each, so that when any new thing started he was prepared as it were extempore to shoot them dead" (B.M. Add. MS. 21128). He applied this method both to his private concerns and to public matters. The habit of putting his thoughts on paper seems to have grown on him with years. As these advanced he suffered from increasing blindness and infirmity, but his activity of mind and pen increased in inverse ratio to that of his body. He has left three lists of writings in his own hand (*infra*, Nos. 158, 159, 160). The first covers a period of thirty-four years (1637-1671) but is of comparatively modest dimensions. In the second he pleads guilty to no less than 50 separate writings in a single year (1685) and in the third to 47 in 1686. Rabelais' catalogue of the works found by Pantagruel in the Library of Saint Victor is scarcely more imposing or more varied. We can only conjecture what additional output there may have been during the unrecorded interval between 1671 and 1685.

The Papers, or such of them as still remain, come from two sources. Petty tells us that he had fifty-three chests of them—" so many monuments of my labours and misfortunes "—two years before his death (*To Southwell*, 23rd April 1685). A considerable portion of these probably related to his Down Survey and eventually found their way to the Irish Records which were destroyed in 1921. Others were no doubt eliminated by the process of time, but many are still extant. Some were seen by Aubrey in Petty's 'closet' not long after his death. Aubrey calls them 'tractatiuncli' and specifically mentions several which are printed in these volumes. They were preserved by Petty's immediate descendants, and (his issue in the male line having become extinct) passed to the family of his only daughter. This daughter, Anne, became the wife of the Lord Kerry of the day, and the Petty Papers have thus found their way to their present home.

For many of the MSS., however, we have to thank Sir Robert Southwell, Petty's friend and cousin by marriage. The two men were in constant correspondence and their letters (to which I shall have frequent occasion to refer in the ensuing pages) show that Petty, especially in his later years, used constantly to send to Southwell his written thoughts on the problems of the day.

Southwell frequently attests his admiration for these communications, and the care with which he preserved them: "I keep in an Ebony cabinet, as in an archive, all the effects of your pen. For I look on them as materials fit for those that I would take most care of, and hope they also will hand them over with like estimation" (15th Sept. 1677). "I shrine all up, and fancy that, in after times, I shall be resorted to for your works as Mr. Hedges is for the true Opobalsamum" (11th Sept. 1682). "If I live I will not fail to assist my godson to hand your works to the press, though doubtless it were better done while you are yet on this side of the pit" (28th Sept. 1687). A second collection of Petty Tracts was thus formed and handed down in the Southwell family. It remained in their hands until the year 1834, when it was bought at the sale of the papers belonging to Edward Southwell Clifford, 18th Lord de Clifford, by the third Marquis of Lansdowne. With the exception therefore of a few stray MSS. at the British Museum and elsewhere, the great body of the Petty Papers have been under one roof for almost a century.

A portion of the combined collections were bound up (without much regard to the date or sequence of their contents), soon after the De Clifford purchase, in twelve large folio volumes. But besides these there are at Bowood several hundreds of loose papers and fragments of all kinds, the arrangement of which has never been seriously attempted.

The Papers and Correspondence were used, so far as the conditions of a single volume biography permitted, by Lord Fitzmaurice when writing the *Life* already referred to. The great majority, however, have remained until now unprinted and unexplored. I have selected such as seemed to be the most interesting, with a preference for the shorter documents and for diversity of subject; and though I have given some papers from which extracts have already been printed, I have (with the single exception of No. 16) included nothing which has already appeared in full.

Much of course has had to be omitted from considerations of space, and some of Petty's principal activities are in consequence scarcely represented in the ensuing pages. Thus I have not dealt with his earlier 'Medical Studies,' though most of these survive in the form of lengthy Latin manuscripts, and would no doubt possess considerable interest for those who are versed in the faculty of medicine. Little again will be found about the Down Survey of Ireland, though in this case not much remains to be said, for Petty's own account of this undertaking and its achievement has been published in full.[1] The voluminous Naval papers and those relating to the 'Double Bottom' or 'Sluice Boat,' which consumed much of Petty's time (and paper) are similarly unrepresented, though well deserving of publicity. I have not attempted to reproduce any of the curious (and often scurrilous) *Satyres* which he occasionally threw off as "a gallery in which you will see the Pictures of my chief adversaries hanged up in their proper colours intended for the honest recreation of my ingenious friends" (*Reflections*, pp. 60-61). Of Petty's verses, which fill a whole volume, I have only given a few specimens, and, deterred in some measure by its length and illegibility, I have resisted the temptation to include the autobiography in Latin hexameters, which he wrote no doubt in emulation of a similar "Vita," composed by his friend and master, Thomas Hobbes of Malmesbury. Lastly there are endless papers concerning Petty's Irish property, with all the disputes which it involved, and others relating to the development of his iron mines, fisheries, and timber trade in County Kerry. Few of these would be of other than local interest, and none have been printed, though the matters with which they deal are sometimes referred to incidentally in the pages which follow.

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[1] *History of the Down Survey.* Edited by Sir T. Larcom, 1851.

The Papers are for the most part undated, though some can be placed by their contents and others by reference to the Correspondence already mentioned. In many cases, however, neither of these aids to classification are forthcoming. I have therefore endeavoured to group them by their subject matter in a series of chapters or sections—not it is to be feared without much overlapping, for Petty's active mind seldom allowed him to deal with only one subject at a time.

In the face of the quantity of written material which Petty left behind him, his unwillingness to make more use of the printing press seems to call for some explanation. An examination of his Bibliography (as given by Hull at the end of his work) shows that some twenty-one of his tracts or writings actually appeared in print while he was still alive. For six of these, however, the Royal Society was responsible; of the remainder, seven were published anonymously—it must be assumed with Petty's permission—and only eight over his own name. With the exception of the *Treatise of Taxes* (published anonymously in 1662) the more important works were not printed till after his death—the *Political Arithmetic* and *Political Anatomy* in 1690-1, the *History of the Down Survey* and the *Treatise of Ireland* during the nineteenth century. Books and pamphlets of every kind were, during the Restoration period, published on the smallest provocation, and the cost of printing can have been by no means prohibitive. If Petty's own figures, as given in the notes *In Printing* (*infra*, No. 139), may be accepted, the book business, even with a moderate circulation, was in his time a profitable one both for writer and publisher. It cannot therefore have been the consideration of expense which deterred him from giving his thoughts to the public.

From the *Correspondence*, however, it is clear that Petty was no seeker after literary renown. He wrote or 'ratiocinated' as a recreation. "My virtue & vanity lies in prating of numbers weight & measure, not sticking to talk even of the proportions of Kingdoms & states. . . . I had rather live upon Herb pottage all the days of my life than not to study truth & those symetries whereby the world stands . . . oh that I had the discretion not to value truth nor scorn lying" (*Corr.*, 19th March 1678). When his business affairs went awry and he was oppressed by a multitude of lawsuits, he wrote the more—for distraction, or (as he described it) as an opiate against his troubles. He was quite content that his papers should be read by the faithful Southwell and by a few chosen friends, or that the ideas which they contained should be ventilated before the 'Virtuosi' of the Royal Society.

It seems indeed that his friends, and not he, were sometimes responsible for his publications. In 1678 he writes to Southwell from Ireland: "Sir Peter Pett talks of reprinting the *Book of Taxes* and of Printing the *Political Arithmetic*, and that the *Paraphrase upon the* 104*th Psalm* is already printed. But, Cousin, absence being the image of death, I hope you will do in this my absence as you must do when I am dead, and take care of these matters. You know I have no luck with my Politics. Slight Court Tricks have advanced many men, but the solid study of other men's peace and plenty ruines me. Wherefore let the stationer do what he pleases with the *Taxes*. I am against printing the *Arithmetic* and wish the *Paraphrase* undone" (*Corr.*, 5th October 1678).

Sometimes again it was Southwell who was the restraining influence. His letters show that he was not a man to take any unnecessary risks, and that he lived in constant dread that his friend would attract unto himself the displeasure of the 'Great Men' by the promulgation of schemes and 'notions' somewhat too advanced for the time. It is worth remembering that (according to Aubrey) Thomas Hobbes was, in his eightieth year, in grave danger of being burnt at the stake on account of the heterodox opinions to which he had given expression many years before!

There was probably also another reason for the non-publication of so much of Petty's work. During his later years his eyes almost completely failed him. As a young man his sight must have been unusually good. Aubrey tells us that "he had a fine hand in drawing and limning and drew Mr. Hobbes optical schemes for him—which he was pleased to like." Petty's early manuscripts, moreover, are written in a minute and neat script, which must have postulated a keen sense of vision. But as time went on his writing both gains in size and loses in form, and the later papers (from which the major part of this collection is taken) are in many places most difficult to decipher. Petty himself made no secret of this disability. Already in 1676 he complained (*infra*, vol. ii, 171) that he was obliged "to see with borrowed eyes and to work by other men's hands," while elsewhere we shall find him alluding to his failing in jocular verse (*infra*, No. 156). He probably suffered not so much from blindness as from astigmatism, a condition common then as now, but one for which the relief was not discovered until the nineteenth century. It is noticeable in some few of the papers which he has attempted to correct, that the pen stroke by which he intended to eliminate the peccant word, passes as often beside that word as through it.

It is easy therefore to conceive that the reading through and correcting of a lengthy MS. would have been for Petty a most difficult task, and he probably shrank from attempting it. That this was actually so is indicated in other ways. On almost every topic which interested him there is more than one paper, while on some subjects his observations are repeated in perhaps eight or ten separate documents. The thesis is generally similar, if not identical, but the variation in its form, and often in the figures used to support it, show that the papers were written at different times. I have endeavoured in the pages which follow to select only the most finished papers on each subject, but even so it will be perceived that there is often a repetition of facts and arguments in more than one document.

Though Petty took the trouble to preserve all these papers, it is rare to find amongst them any attempt at correction. It thus becomes apparent that every time he set pen to paper it was his practice to begin 'de novo,' and that he preferred the labour of starting the whole subject afresh to that of reading through and correcting what he had previously set down.

Southwell sometimes questioned the utility of so much writing. This was Petty's reply: "You ask me why I persist in these fruitless labours. I say they are Labours of pleasure, of which ratiocination is the greatest and most angelical. And being by my age near Heaven, I think it high time to build myself a tomb on earth out of these materials, to which I hope you will furnish mortar in due time" (*Corr.*, 16th August 1687). His injunction was in fact carried out by the posthumous publication of the two works I have already mentioned through Southwell's agency, and by the meticulous care with which his friend preserved every scrap of Petty's writing that fell into his hands.

I have said enough to show that nothing which is printed in these volumes was intended, or at all events prepared, for publication. My readers must therefore make the necessary allowances for the shape in which the papers appear. Only a few of them can properly be distinguished by the title of 'Essays.' Some are merely the heads of arguments which might afterwards have been (but never were) expanded into a serious treatise or 'discourse.' Some are in the form of those discursive 'Observations' which Petty loved to put down on any matter which engaged his attention. Others again are little more than notes on some subject on which he was afterwards to enlarge at greater length. Once written, however, all these 'tractatiuncli' were put away and seemingly never looked at again. If the papers are rough and unfinished in method, it may at any rate be claimed for them that they have the virtue of complete spontaneity. The thoughts are Petty's real thoughts, and there is no suspicion of the 'dressing up' which would have been necessary, for political as well as other reasons, if they had had to be revised for public consumption. I have not as a rule attempted to alter the text of the original MS., but have confined my editorial efforts to such changes in the punctuation and paragraphing as might conduce to its easier reading. Nor have I corrected Petty's calculations, which are sometimes extremely inaccurate—it is curious to find that the exponent of 'Political' Arithmetic so frequently fails in the more elementary branches of the science which he had made his own.

The spelling has been similarly treated. I have with few exceptions left it as I found it, including the initial Capitals, which are often absent where they might be expected and more often present where they might not. Orthography in the seventeenth century was of course an uncertain art, and Petty was not more impeccable therein than were his contemporaries. In fairness to him, however, it should be stated that many of the mistakes are not necessarily his, but rather those of persons who wrote or copied the papers for him. Though most of the papers, especially the shorter ones, are in his own hand, a considerable proportion were set down by others. There is nothing to show whether these were dictated or copied from Petty's rough notes, but I am inclined to think that those in which the grosser blunders occur were transcribed, after being taken down in some sort of shorthand, by persons who but dimly understood their meaning. However this may be, there seemed to be no middle course between correcting everything or nothing. By choosing the latter alternative, Petty has no doubt often been deprived of the benefit of the doubt, but his method and arguments are at all events in no way affected.

If Petty's orthography has been a difficulty for the Editor of these volumes, so also has been his legibility. I have already noticed the marked deterioration of his later script, as compared with that of the earlier documents. Many of the papers printed were, moreover, hastily and carelessly written. Some of them could not be deciphered without much guesswork, and in view of the strange words and turns of expression which Petty often used, guessing was not easy. I have indicated by notes of interrogation words or phrases which are doubtful, either because they are not clear in the original MS., or because (while seemingly clear) they do not appear to fit the sense of the passage in question. All words interpolated by me are shown in square brackets.

I should perhaps add that the original papers are full of the usual seventeenth-century contractions: 'ye' for *the*, 'yt' for *that*, 'wch' for *which*, 'wt' for *what*, '-c̃on' for *-tion*, and many others. These abbreviations, if characteristic of the period, are awkward for the printer as well as reader. I have eliminated them throughout, retaining only the symbol "m" (a thousand), which Petty, who was fond of dealing with large numbers, almost invariably employed.

It has been suggested above that Petty, as the first to attempt the collection of facts and figures, and to postulate their use in political and economic discussions, was the real founder of the Science of Statistics, and (in a more limited sense perhaps) the originator of what we now call Political Economy. If this claim goes somewhat beyond that which has hitherto been made on his behalf, it will I think be justified by the new evidence now available. Statistics of course in his day existed neither in name nor in fact, but both the *Papers* and the *Correspondence* show that Petty was constantly striving to obtain them, and insisting that all politico-economic problems should be dealt with in terms "of number, weight, & measure."

The data he desired were often not available, and at best were scanty, but such as they were he insisted on using them. He applied to them the process which he described as 'ratiocination.'—a word which, as Hobbes explains, 'The Latines extended from accounting to the faculty of Reckoning in all other things' (*Leviathan*, chap. iv). If his conclusions were sometimes faulty he was content to put them on record for what they were worth, leaving them to be checked or corrected in the light of fuller information.

Petty's system was, in fact, that of experimental or inductive reasoning, and therein he directly followed Galileo and Bacon. Galileo in his *Il Saggiatore* had specifically drawn attention to the method of investigating nature by number, weight, and measure—thus establishing the distinction ever since maintained between the primary qualities, which are outside ourselves, and the secondary qualities which depend upon the sensations. Petty constantly insisted on the use of these tests, and on the application in all things of the *Sensata*. Bacon, who had initiated or invented the 'experimental' method, made it clear in his writings that he intended his 'New' Philosophy to be applied to the whole realm of natural knowledge. It fell to Petty to carry out that intention in the spheres of Economics and of Politics.

He called his system "Political Arithmetic." The phrase is almost certainly of his own invention. It first appeared in print in his Epistle to the Duke of Newcastle, prefixed to the *Discourse of Duplicate Proportion* published in 1674, but he had coined it some years before. The book which was eventually published in 1691 under this title was, as we now know, composed just twenty years earlier. It was to this that Petty was referring when he wrote to Southwell in December 1672: "I have a world more of Political Arithmetic but cannot calculate the dimensions of the King his Reformations, no more than I could of his last year's victories."

In one of the last letters which passed between the two men Southwell says: "You are the first man that ever brought Algebra into Human Affairs, and what is more you have given it the utmost improvement. And perhaps you were born for it, since to this day no man is risen up to make anything of it, tho' tis now twenty years since you have instructed the world therein." Perhaps 'Algebra,' as Southwell here calls it, better expresses Petty's method than 'Arithmetic,' but, by whichever name it may be called, it remains true that Petty 'instructed the world therein.' He was in fact the direct mental predecessor of the political economists of the eighteenth century; and if the facts which were available to his successors had been at his disposal, his discoveries might well have been as revolutionary.

Petty's title to have been the originator of Statistics has been hitherto subject to an important reservation. In 1662, before any of his works had appeared in print, the *Observations on the London Bills of Mortality* were published over the name of his friend Captain John Graunt. This book constitutes the first recorded instance of the collection and use of statistical figures, and it is agreed that to its author must be given the pride of place as inventor of the Statistical Method. Several contemporary authorities have asserted that the Observations were in fact Petty's and not Graunt's, and there are good reasons for doubting whether Graunt was capable of producing such a work. Many plausible arguments have however been adduced in favour of Graunt. "The disputed authorship" has been frequently discussed in print both at home and abroad. The decision seems to have formerly inclined to the side of Petty but more recently to that of Graunt, whose claims to have written the Observations are supported in a closely reasoned article in Hull's volume. In the final chapter of this book I have advanced some reasons, based on new evidence both from the writings and from the *Correspondence,* for suggesting that the verdict needs reconsideration.

Petty was an original member of the Royal Society. He has sometimes been called its 'father.' He was at any rate one of its most active supporters, and was instrumental in the birth of its offspring, the short-lived Dublin Philosophical Society of 1684. While he was at Oxford during the early days of the Commonwealth, a little band of men interested in the 'New' or Experimental Philosophy had been in the habit of meeting in each other's lodgings to exchange ideas. Their discussions were interrupted for a time by the disturbed state of the country, but just before the Restoration the same men began to come together once more in London. Their rendezvous was then at Gresham College, where we are told Petty had formerly held the post of Professor of Music—a term which seems to have been then used in the same sense as the Greek μουσικὴ as covering art, letters, and accomplishments generally. The Philosophers of Gresham College were at any rate not concerned with music, but with the systematic pursuit of scientific knowledge. The religious wars in England and Germany had produced no conclusive result, and there was a consequent reaction towards science and nature. Many were attracted towards this New Philosophy, including the King, and in 1662 the 'Virtuosi' of Gresham College became officially incorporated as the "Royal Society for Improving Natural Knowledge," which has so continued, with an unbroken record, till the present day. Petty's principal contributions to the discussions of the Society may be read in the "Transactions." The memoranda and notes among his MSS. show, moreover, that he was as keenly interested in its administration as in its objects.

Petty accepted—as all who hoped to prosper under the Restoration were bound to do—the conception of Monarchy as of divine right. In most of his plans and suggestions, political and economic, he was at pains to show that they would increase rather than diminish the powers of the Sovereign. But he must have worked too long with and for the Cromwellians to have forgotten the more democratic outlook of the Commonwealth and it may be suspected that his own political philosophy really inclined in that direction. His arguments are sometimes justified on the score that they are in accordance with the 'Law of Nature' or with the 'vox populi,' and sometimes he is found explaining that they were not as 'democratical' as they might seem. He was, however, definitely an advocate of more equal representation, and as definitely in favour of basing this representation upon a system of adult male suffrage.

In religious matters also he postulated freedom of thought. He was for ever urging Toleration and Liberty of Conscience, and—though I have only printed two of them—there are probably more papers on this than on any other subject. Like Newton, he was fundamentally a rationalist, dealing with facts; both men, however, were sufficiently interested in the dominant religious ideas of the previous age to give much time to theology. Newton after writing his *Principia* embarked on a very curious commentary on the prophet Daniel. Petty, though immersed in affairs and in his Political Arithmetic, left a whole volume of papers on religious subjects, and was prepared to give the world a scheme of religion of his own making. There is some reason for believing that in his earlier years he may have conformed at least outwardly to the Catholic faith. How else could he have made so favourable an impression on the Jesuit fathers at Caen, and secured at the age of fourteen admission to their college? But however this may be, he eventually became identified with the Protestant interest in Ireland by reason of his possession of forfeited lands.

It would be impossible to attempt anything in the nature of an epitome of the papers which are printed in these volumes. Some of them are very similar in form and content to the published works with which we are already familiar. Others display Petty in new and hitherto unsuspected spheres of activity. Amongst the latter the papers on *American Plantations* (chapter xvii) are perhaps deserving of some special notice. If the *Notes about New England* (Nos. 107 and 108) do not add much to what is already known of that plantation in the days of its youth, the papers relating to Pennsylvania (Nos. 109-113) throw a new light on the relations between William Penn and Petty at the time of the foundation of that colony. I have printed a letter (to Lady Petty) in which Penn refers to Sir William as 'his old Aesop & friend.' Only two others survive out of what was probably a considerable correspondence. From the tenour of their communications as well as by several allusions to Penn in the *Correspondence,* it is clear that a very close friendship must have existed between the two men. These papers indeed indicate that Penn may have been guided by Petty's ideas in framing the rules and regulations for his plantation, while the later Shelburne correspondence shows that Petty (though his name does not figure in any of the lists now extant) was in fact one of the original 'Shareholders' in the new Colony (vol. ii, 98 *infra*).

The outstanding feature in all Petty's writing is his versatility and originality of thought. He was no reader; he himself admitted to Aubrey that he had read little since his twenty-fifth year. But nothing came amiss to him—Politics, Religion, Science, Navigation, Eugenics, Education—he was ready to ‘discourse’ on all or any of them in English or in Latin, in prose or verse. He once complained to Southwell that he was “represented by some to be a conjurer and by others to be notionall and fancyfull near up to madness” (*Corr.*, 16th September 1682). It is worth examining a few of his ‘notions’ in their relation to modern developments.

That there should be no taxation without the consent of the taxed, as signified by their representatives, had been one of the watchwords of the Parliamentary Party in their long struggle with King Charles I. But through his paper *Of the House of Commons* (No. 2 *infra*), Petty might almost claim a place amongst Parliamentary reformers, for he there formulates a definite plea for the co-ordination of Taxation and Representation.

In his *Grand House of Peers* (No. 3) he suggests the strengthening of the Upper Chamber by the addition of representatives ‘from all & every part of his Majesty’s dominions’ in order that it may hold its own against the House of Commons. If the methods and objects which he had in view were not precisely the same as those advocated to-day, it is none the less interesting to see that the matter of House of Lords Reform dates back to the seventeenth century—a fact which may be held to give a new aspect to the plea that this question ‘brooks no delay.’

The same paper contains the curious suggestion that life peers (or rather life dukes) might be created apparently in order to secure a majority for the Sovereign’s will.

Of a General Council, etc. (No. 5) suggests the admission of representatives from the Colonies to advise the King on matters of Trade, Agriculture, Finance, &c. Though this Council was not to enjoy the power of legislation, it is nevertheless noteworthy that Petty suggested it should be elected by the manhood suffrage—a proposal first made by the

Levellers during the Commonwealth, but refused by Cromwell, who preferred a £200 property qualification!

In the papers on Ireland (Nos. 6 and 7) Petty, in this case following Cromwell, develops the plan to which he constantly recurs elsewhere for a Union through representation in a single assembly. His scheme differed from that which was subsequently carried by Pitt, for Petty (correctly as it afterwards appeared) foresaw that no Union could permanently endure unless the populations in each country were homogeneous. He proposed to effect this change by the 'transplantation' of a million souls on either side of the Irish Channel!

Turning to London in No. 12 we find him proposing—just two centuries before the reform took place—that the metropolis should be formed into an administrative county with a Common Council, while a little further on he suggests that it should have a 'Council of Health' and a 'Council of Trade' of its own.

The present Ministry of Health and Medical Research Council are foreshadowed in No. 129, where Petty points out that it is the duty of the State to advance the art of medicine, and against its interest to 'leave Physicians and Patients to their own shifts' (vol. ii, 176). On page 267 (vol. i) as well as on page 54 (vol. ii) we shall find him advocating lying-in hospitals for women, and he appears to have contemplated that in some circumstances the children should be educated and maintained by the State.

He was prepared also with a scheme for *Provision for the Poor* by means of which work was to be found for those who wanted it, a careful distinction being made, skilled and unskilled labour, and those who were 'impotent' or unemployable.

For the Plague (Nos. 14, 15, and 16) he recommends segregation in what we should now call Isolation Hospitals. In No. 25 there is a plan for a Land Registry which goes far beyond the somewhat tentative effort which has in recent years been placed upon the statute book, and in No. 129 he advocates the establishment of hospitals for the special purpose of training the medical faculty.

Among the papers about Religion there is one, *Religio Christiana puerilis* (No. 35) which contains a form of undenominational religious teaching which might have served as a basis for the famous Cowper-Temple Clause in the Education Bill of 1870, while in dealing with Liberty of Conscience (Nos. 42 and 43) he shows a much wider conception of the true spirit of toleration than the most enlightened of his contemporaries.

The papers which I have selected under the head 'Statistical' in Chapter VII are, as will be at once perceived, not the only ones which deal with figures, but rather those which show the kind of statistics which Petty desired to obtain. In the *Method of enquiring into the state of any country* (No. 51) we have a complete scheme not only for obtaining a census of the population, but for collecting all sorts of other information relating to land, trade, revenue, &c. The next paper, *Accountant General of Lands and Hands* (No. 52) is complementary, and indicates the duties which Petty was prepared to carry out as 'the King's Accountant.' No one was, however, appointed as such until nearly a hundred years later. In No. 58, *Of Lands and Hands*, is shown, more clearly than in any other paper, the method which Petty set himself to follow in extracting his deductions from his figures while the *Mercurius Londinensis* suggested in No. 59 was evidently to be a weekly Statistical Gazette, by means of which the Accountant General might keep these figures up to date.

England had secured the *Dominion of the Seas* under Elizabeth, she held it under Charles I and the Commonwealth, but lost it for a time under

Charles II. The idea therefore was not a new one in Petty's time, but his essay under that title (No. 65) goes to the root of the matter, and shows how clearly he perceived that the secret of England's strength lay in her maritime supremacy. This paper, as well as the two which follow it (Nos. 66 and 67) give Petty's ideas as to the *Mare Clausum*, which Selden had advocated, and Grotius opposed in his *Mare Liberum*. It is worth remark that Petty's plan for keeping out intruders from the narrow seas surrounding the British Isles, by means of picket boats in signalling communication with a striking force in port, was in fact very similar to that employed against the Germans during the Great War.

About forty years ago this country was startled by the announcement (from the mouth of the late Mr. Jesse Collings) that in a well ordered community, every man should have for his use and support three acres of land, to which it was suggested a cow might usefully and properly be added by a paternal government. "Three acres and a cow" was soon afterwards adopted as the watchword of the Radical party, and became one of the principal issues in the hotly contested general election of 1886. The conception embodied in this phrase is known to have been previously enunciated by Hasted in his *History of Kent*, and by Bentham, somewhere amongst his voluminous works, but so far as I have been able to discover, no one has yet been able to trace its origin, nor the basis on which three, in preference to any other number of acres, was selected as the magic quota.

Perhaps Pitt was responsible for the 'cow,' for in 1797 he introduced a bill which amongst other things would have provided one on demand for every respectable pauper. But Petty, it seems, must be given the credit for the original discovery that three acres apiece were necessary to mankind.

In the *London Observations* he (or as some would have it, Graunt) concludes, on the basis of a population of 6 millions and an acreage of 25 millions, that there actually was in England and Wales about 4 acres of land per head, and he suggests that this might ‘agree with the Rules of Plantation’ and serve as ‘a hint to enquiry concerning the fundamental trade of Husbandry’ (Hull, p. 372). In the present volume he ventilates the same idea on three separate occasions. On page 267 he calculates that if the number of the people in the British Isles were doubled, there would still be “near four acres of land to every head, which with moderate labour will afford necessaries unto them.” On page 56, vol. ii, he concludes again that “$3\frac{3}{4}$ acres, well cultivated, will maintain one head, at a medium of men, women and children”; while on page 112, vol. ii, he definitely asserts that (in America) “three acres of land is enough for each head.” In the unpublished correspondence with Southwell he constantly reiterates his conviction that all would be well in the future so long as this ratio of population to land was not surpassed.

Three acres per head appear therefore to represent Petty’s final conclusion on the matter, though it is curious to observe that he reached it entirely on *a priori* grounds and not by calculation of the produce of the land or the necessities of the cultivator. What would he have thought of the recent census report for England and Wales, which reveals the fact that there are to-day 649 persons per square mile, or rather less than one acre to every human being in these two countries?

The discussions which have taken place since the termination of the Great War as to the invention of the Tank are fresh in public recollection. Petty’s name might almost have been entered in this competition. Armour-plate and caterpillar traction would of course have to be eliminated. But this done, the similarities in object and method between the Tank and Petty's *War Chariot* (Nos. 99 and 100) are curiously suggestive. I have developed this point elsewhere (*infra*, vol. ii, 61).

In the paper *For the prevention of the abuse of oaths and for ascertaining testimony* (No. 142), supporters of the 'monomark' may perhaps find an early precedent for the reform which they are advocating to-day, while the 'Dictionary' (No. 46), the proposal for an Alliance with France (No. 76), and the suggestion for a decimal coinage (vol. i, 271), have all in their time passed from the region of ideas into that of accomplished facts.

In a document printed by Fitzmaurice (but not repeated in the present collection) Petty once more shows an intelligent anticipation of modern developments. This was *A demonstration that an Engine may be fixed in a ship to give her fresh way at sea or in a Calm* (*Life*, 122). Steam propulsion was still a long way off, and his 'Engine' had perforce to be worked by man-power, but its motive force was the paddle-wheel, which some two centuries later was in universal use and has not yet been entirely supplanted by the more efficient screw propeller.

Finally there was the famous 'Double Bottom' or 'Sluice Boat'—first launched in 1663, sunk in a storm with all hands during the year following, and thrice afterwards tried in varying forms. Though it failed for the time being it was not dead, and a 'Double Bottom' (driven by a paddle-wheel) reappeared in the latter half of the last century, in the form of the steam-packet "Calais-Douvre" which many can still remember. Petty may be said to have been posthumously justified in his unshaken faith in this invention, for the "Calais-Douvre" in her time must have safely carried some millions of passengers between the ports from which she took her name.

Petty's 'notions' were indeed curiously in advance of his time. We need not wonder that they were considered by his contemporaries "fancyfull near up to madness."

Many references (under the short heading of *Corr.*) will be found in the pages which follow to the Petty-Southwell Correspondence mentioned above, which constitutes an important section of the MSS. now at Bowood. The letters, more than 200 in all, were brought together in the same way as the *Writings*; those from Southwell's being found amongst the Petty papers, while Petty's contribution remained in the hands of the Southwell family until bought at the de Clifford sale in 1834. The collection is thus bilateral, while it is unusually complete for one of this date. Portions of the correspondence have been quoted in Fitzmaurice's biography, as also by Hull; the great majority of the letters, however, have not yet seen the light. It is my intention to print them in full at an early date. As already explained, many of Petty's essays and writings were passed in the first instance to Southwell. The Correspondence, besides giving the dates when they were sent, furnishes a running commentary by both writers upon the documents in question. It is thus, apart from its historical value, of special interest to students of Petty's work.

My thanks are due in the first instance to the Authors of the two books mentioned at the beginning of this Introduction. It would have been impossible to attempt the editing of Petty's unpublished Papers without the foundation furnished by Lord Fitzmaurice's *Life* or the compendious Edition of his *Economic writings* with the notes provided by Professor Hull. For the sake of brevity I have referred throughout to both these works under the names of their respective writers.

To others my thanks are due for encouragement in the original undertaking of this publication, for useful suggestions on the many questions involved, and for help in deciphering some of the obscurer passages in the MSS. My father, the late Lord Lansdowne, was keenly interested in the work but did not live to see its completion—when he died in June last the first proofs were only beginning to emerge from the press.

Dr. Charles Singer, besides assisting me in other ways, has placed at my disposal his unrivalled knowledge of Medical History in the elucidation of the papers contained in chapter xxii. I hope he may soon be persuaded to deal with some of Petty's longer and more serious Medical Treatises which are not included in this publication.

Mr. R. A. Tawney supplied me with some important though hitherto unnoticed evidence in support of Petty's authorship of the London Bills of Mortality.

Finally I have to thank Mr. A. B. Bence Jones for his help in reading through and checking the whole work in proof.

BIOGRAPHICAL CALENDAR

1623. Born at Romsey in Hampshire.

1636. Went to sea, with 6*d*. in his pocket.

1637. Broke his leg and was ' turned ashore ' in France, where after hawking for a time imitation jewellery, playing cards, and ' hayre hatts,' he secured through the favour of the Caen Jesuits admission to their University.

1638. At the age of fifteen, he ' had obtained the Latin, Greeke, and French tongues, the whole body of common Arithmetic, the practical Geometry and Astronomy conducing to Navigation, Dialing, &c., with the knowledge of several mathematical Trades ' (Petty's Will).

?1640. Joined the King's Navy.

1643. On the outbreak of the Civil War went to the Netherlands, studied Medicine at Utrecht, Leyden, and Amsterdam.

1645. Read with Hobbes in Paris.

1646. Returned to England, and later proceeded to Oxford where he became successively Doctor of Physic, a member of the Royal College of Physicians, Fellow and Vice-Principal of Brasenose College, and Professor of Anatomy; about the same time he was appointed Professor of Music at Gresham College.

1650. Restored to life Anne Green, who had been executed for the murder of her child at Oxford.

1652. Appointed Physician to General Fleetwood and the Cromwellian Army in Ireland, and Clerk of the Irish Council.

1654. Obtained the contract for the Survey of Ireland.

1658. Finished the Survey, by which he made £9,000—bought therewith a number of land 'debentures' (*i.e.*, grants of forfeited lands in Ireland made to the soldiers of the Cromwellian Army and put up for sale) and a property at Tokenhouse Yard in the City of London.

1659 (January to April). Member for West Looe in Richard Cromwell's Parliament.

1661. Knighted and elected Member of the Irish Parliament for Innistioge and Enniscorthy.

1662. The *Treatise of Taxes & Contributions* and the *Observations on the London Bills of Mortality* published.

1667. Married Elizabeth, daughter of Sir Hardress Waller, widow of Sir Maurice Fenton and cousin to Sir Robert Southwell; by her he had three surviving children (two sons and one daughter).

1671. Wrote the *Political Arithmetic* (published in 1690).

1673. Bought a house in Piccadilly.

1676 (to 1685). Mainly resident in Ireland, where he now had large private interests, notably in co. Kerry. He was for several years Judge of the Irish Admiralty Court in Dublin.

1682. Wrote *Quantulumcunque concerning money* (published in 1695).

1685 (May). Left Ireland for good and spent the last two years of his life in London.

1683 (to 1687). Published various short essays on Political Arithmetic, the Growth of London, and the Dublin Bills of Mortality.

1687 (December 13). Died in London.

(Lady Petty was in 1688 created in her own right Baroness Shelburn, and Petty's sons, Charles and Henry, held the same title in succession, but both died *s.p.v.* In 1754 the title was revived in favour of their nephew John Fitzmaurice, second son of Thomas, Earl of Kerry, and Anne Petty who had succeeded to the Petty estates; and from him it passed to his son, who became first Marquis of Lansdowne.)

I

GOVERNMENT

(1) The King and his Four Councils—(2) Of the House of Commons—(3) Of a Grand House of Peers—(4) Of a Grand Council for Plantation and Trade—(5) Of a General Council for Plantation, Manufacture, Trade, Religion, and Applotment—(6) Of uniting England and Ireland by a Common Parliament—(7) An Expedient in order to a Union of England, Ireland, and Scotland—(8) A Dialogue about the Parliament of England.

GOVERNMENT

I HAVE printed in this section Petty's principal papers relating to the Legislative Institutions of England.

In the first (*Of the King and his four councils*) he sets forth a plan for the government of the country by the Sovereign, assisted by four 'councils' and three 'armies.' The scheme lacks something in clarity of statement, but apparently involves:

(i) An elected Common Council or *vox populi* of 400, 360 of whom were to constitute the House of Commons while 40 were to act as a supreme judicature in matters of property.

(ii) A 'grand' or 'Chief Council,' which was to include the 40 members of the Common Council, and to be reinforced by 90 officers representing the army and by 50 peers.

(iii) A 'Privy Council' consisting of one-sixth of the Grand Council, or 30 members.

(iv) A 'Cabinet Council' of one-third of the Privy Council, or 10 members.

The duties of these several bodies are merely sketched, but in his list of *things to be done by the King & his four Councils* Petty makes it clear that they were to absorb the entire functions of government, the House of Commons as such being relegated to a subordinate sphere. Under the heading of the 'three armies' he designates the Train bands or Militia, the paid standing army, and the Guards (*infra*, p. 6).

The paper was probably written in 1679 when Sir William Temple was busy with his plans for the reform of the Privy Council. It may have been intended as a sort of counterblast to Temple's proposals. The documents which follow contain proposals of a wholly different character, but we can only guess whether in point of date they preceded or came after the first.

No. 2 *Of the House of Commons* briefly recites the inequalities of the existing system of election to Parliament, and is in fact a plea that taxation and representation should be more evenly balanced.

In the third (*Of a Grand House of Peers*) Petty adumbrates an enlarged and strengthened Upper Chamber, frankly admitting that he would like this assembly to become the 'supreme judicature' of the country, as a body suited both by numbers and personnel to act as a check on King and House of Commons. He suggests that besides the English Peers it should contain a representative element from Ireland, Scotland, and the Dominions, selected from the men 'of best estates' in each country.

The next two papers, *Of a grand Council of Plantation and Trade* (No. 4) and *Of a general Council for Plantation, Manufacture, Trade, Religion, and Applotment* (No. 5), are undated. It seems probable that they were written immediately after the Restoration and placed before the King, for towards the end of the year 1660 two such councils, to be subsequently united into one, were in fact instituted by Charles II. In these two papers we find again the idea of Dominion Representation, though the Councils were to be additional to the existing Chambers, and to have merely advisory functions—the *grand Council* for England only, the *general Council* with a representative element added from Ireland, Scotland, and the Colonies. In the first there were to be 600 members—200 nominated, 100 representing the freeholders, and 300 popularly elected; in the second 538 members all popularly elected, of whom 450 represented England and 88 Ireland, Scotland, and the Colonies. It is noteworthy that Petty's proposed form of popular election (though the voters were not themselves to choose their representative, but to depute this right to electors) was founded upon adult male suffrage, every male of 21 years of age being given a vote. More than two centuries were to elapse before this principle met with general acceptance.

Of Uniting England & Ireland by a Common Parliament (No. 6) and *An Expedient in order to a union of England, Ireland, and Scotland* (No. 7), were, as their titles would imply, prompted by Petty's often repeated wish for a single Legislature for the United Kingdom. They deal chiefly with the methods by which such a Parliament might be elected. In the first England and Ireland only are considered, and it is proposed that they should respectively elect (again by adult male suffrage) 480 and 40 members. In the *Expedient* Scotland is also brought in, and the numbers suggested are for England

450, for Ireland 90, and for Scotland 60. The method of election is, however, different. Petty no longer proposes to trust Ireland and Scotland with the direct selection of their representatives, but suggests that the English Shires should in each case select the quota required from amongst the existing representatives of those countries. He once more anticipates events by more than a century in the proposal that there should also be Representative Peers from Ireland—in the proportion of one-fifth of the English House of Lords.

In the last paper (No. 8) Petty presents in the quaint form of a *Dialogue between A & B* his ideas of the origin and institution of the *Parliament of England*. He shows that the King had become all powerful, and at the time of writing (1687) virtually controlled both Houses, but he points out that it was possible, nevertheless, that Parliament might not 'answer his expectations'—a forecast which was to be strikingly fulfilled in the following year. Petty finally arrives at the conclusion that though the King should continue to appoint his executive ministers, the matter should be reduced to the 'law of nature' by which he understands the 'freest election that can be contrived.' He concludes with a paragraph in which he points out the great truth (which England above all other countries was to prove) that Democracy and Monarchy are not necessarily inconsistent with one another; and that while a Democracy may use its powers tyrannically, a wise monarch will, in matters which concern his people, be guided by their desires.

No. 1

The King and his four Councills (Chiefe, Privy, Cabinet & Comon) and the 3 armyes.

1. That the King of England is a monarch.
2. That the people, Males & Females above 10 yeares old, are ye nationall church [*sic*].
3. That those between 10 and 70 are the labor,
4. The males between 16 & 60 the strength,
5. The males between 18 & 60 the father, and the

females between 16 and 44, the common mother of the people.

6. The males of above 21 years old the representatives of the whole.

7. The militia is $\frac{1}{10}$th of the males between 16 and 60.

8. The army in pay [is] the $\frac{1}{10}$th of the militia.

9. The guards $\frac{1}{10}$th of the army.

10. The *Grand Councill* [is] the officers of the above army, or 90 of them.

11. 400 are a just number to represent the people.[1]

12. $\frac{1}{10}$th of that 400 to bee the supreme Judicature between man & man; leaving 360 for the House of Commons.

13. The said 90 and 40, and 50 chosen by lot out of the old peeres (in all 180) to be the *chefe Councill.*

14. $\frac{1}{6}$ of the Chefe or Grand Councill [to be] the *Privy Councill.*

15. $\frac{1}{3}$ of the Privy [Council] are the *Cabinet Councill.*

16. The Revenue to be $\frac{1}{24}$th of the people's expence, and $\frac{1}{4}$ of an hower per diem of their Labor.

17. Qy.: Whether the territory (?) bee best fully and thinly planted (?) or mediocriter all over alike.

18. The work of the *Vox Populi* is:
   (1) To keep peace in religion.
   (2) To applot the revenue.
   (3) To multiply the people.
   (4) To provide soldiers & seamen.
   (5) To provide for the poore.

19. The work of the 40 [is] to bee the Supreme Judicature in matters of Property.

20. The worke of the Grand Councill [is] for Invasion, the Armyes.

21. Of the Privy Councill [is] for The Chancery, Treasury, Admiralty, Secretaryes.

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[1] Though Petty does not say so, it is evident from the context and from other allusions (*infra*, p. 266) that the 400 representatives of the people were the body which he distinguishes by the name of the 'Common Council.'

22. Of the Cabinet Councill [is for] Ambassadors, Intelligence and Accounts, Peace & Warre.

Things to bee done by the King and his 4 Councills.

1. Liberty of Religion & peace.
2. Peopling the Territoryes.
3. Multiplying the people.
4. Employing the spare Lands.
5. Providing for Impotents.
6. Securing Titles of Land.
7. Providing Stock for a forain Trade.
8. Soverainty of the Seas, and of freight, fishing and Indies.
9. Regulation of Coynes.
10. Church Temporalities.
11. Lessening the Plague.
12. Adjusting of revenues.
13. War, peace and alliances, Intelligence.
14. Advancement of Arts.
15. Publiq Ornaments and Magnificence.

No. 2

OF THE HOUSE OF COMMONS

1. This house consists of 513 members; viz: of 91 chosen by freeholders, and 422 by 211 Corporations.

2. These 513 members have from 500^{m}£ to 800^{m}£[1] estate, and are men of good estimation with the people.

3. There are about 160^{m} freeholders, and not 40^{m} members of Corporations in England, in all under 200^{m}. Whereas there are above 800^{m} others who have no vote at all.

4. The Elections in 52 shires and 211 Corporations are governed by lesse than 2000 active men.

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[1] *I.e.*, £500,000 to £800,000. Petty employs this symbol throughout his papers.

5. The 160^{m} freeholders who chuse but 91 members [are worth] about 160 millions; supposing the lands of England to bee worth 8 millions per annum and 20 yeares purchase. Whereas the 40^{m} chuse 422 [members] and are not worth 20 millions.

6. There bee 10 of the 211 Corporations which send but 22 members (viz. London, Westminster, Southwark, Yorke, Newcastle, Exeter, Bristoll, Canterbury, Coventry, Chester), which are worth double to the other 201 Corporations which send 400 members.

7. The County of Cornwall sends 10 times as many members as Cheshire.

8. The number of members beares no kind of proportion to the tax assessed and subsidy lately set upon each County.

9. In some places a set and small number chuse. In others an uncertaine number of freemen. In others, the proprietors of lands within the Corporation, etc.

There is nothing more odious and grievous in the dispensation of authoritys, or in the levying of Taxes, than Inequality.

No. 3

Of a Grand House of Peeres

Suppose that the House of Peers in England (which now consisteth of 26 Spirituall and — Temporall Lords), were hereafter made to consist of the same which now it doth, and of as many more as would make their present number 520; Of which 40 to bee cald out of Ireland, 30 out of Scotland, and 10 more out of the rest of his majesty's Dominions in Asia, Affrica and America, All men of the best estates within the respective Provinces.

The consequences whereof would bee as followeth;

1. The said number of 520 would bee greater then that of the House of Commons in England (which is

but 513) and greater then the number of any other Assembly within the King's Dominions; and consequently of greater naturall strength then any one denomination whatsoever.

2. The said 520 Peers, would probably bee Richer, then any treble number of men that could bee nam'd in his Majesty's Dominion; and consequently more powerfull then any other Assembly, as well for their wealth as their number aforementioned. Nor is there any doubt, but that the said 520 may bee of as good naturall and acquired parts, conduct, and experience, as any other the like number whatsoever.

3. This House of Peers would bee really an Upper House fittest for Supreame Judicature, because most above all byas and Corruption (for who could bribe them?) and fittest for being a standing and perpetuall Legislature, none haveing greater stakes to loose then themselves.

4. This great number would easily furnish the King with all sorts of Great Officers, military, civill, and Ecclesiastiqcall.

5. This House would bee a full and well proportioned Representative of all and every part of his Majesty's Dominions, which the present Government hath hitherto wanted.

6. This great and powerfull Assembly may bee as easily checked with the King's Negative, as the present House of Peers are.

7. The King could not but prefer the advice of this great Councill before the private insinuations of any Caball whatsoever.

8. Whereas many do maligne, and would throw out the present 26 Bishopps, by reason of the weight that their united votes do make in the present small House of Peeres, the said Bishopps would then bee but the 20th part of this inlarged House, and not bee obnoxious to the envy, or lyable to the danger they now are under.

9. Above 300 persons thinking themselves fitter for

Governments then a smaller and weaker number, would bee taken of from disturbing the King's Choice of Governments, and would bee able to suppresse the ambition of others.

10. Suppose that a few of the Richest Papists were within the List of these additional Peers. They could not sitt, nor Act, by reason of the late Clause,[1] untill they had taken such Oaths and Tests as the same requires.

11. The King can check even this great Body by adjournment, Interrogation or Dissolution, as hee doth the present lesser Body.

12. This powerfull House, haveing Supreame Judicature, may (if they please) see all good Laws well interpreted and Executed, neither could any new Law passe without them.

13. If the King's Revenue should not much exceed the ordinary and necessary Charge of the Government, then the King upon all extraordinary occasions must necessarily heare this House, and permit them to chastise such Innormitys as shall happen in the Intervalls of their sitting.

14. This inlargeing of the House of Peers is within the King's ordinary Power; nor is it any wrong to the present Peers or House of Commons, for that it restoreth the one to bee really the Upper House, and keepeth the Commons to bee the Lower House, as they have been vulgarly called.

15. This Constitution doth not interfear with the Parliaments of his Majesty's other Kingdomes, nor with the Assemblys of his American Colonys, but doth equally superintend them all.

16. That altho' the number of this House be too great for many kinds of actions, yet they can choose out such a small number, as is fitt for secrecy and dispatch.

17. Memorandum: that this House is chosen by the King, as that of the Commons is chosen by the People;

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[1] The Test Act of 1672/3.

and consequently all the Powers and faculties of the Nation are well represented by the King and two such Houses of Parliament.

N.B.—If the King would change the precedency of the Peers, Hee may do it by making all to bee Dukes, in such order of Priority as hee pleases, and so continue during the King's life onely, so as they may be changed by every succeeding King in the first yeare of his reigne.

No. 4

OF A GRAND COUNCILL FOR PLANTATION AND TRADE

Of a grand Nationall Councill, consisting of 600 Persons (being the greatest number that can heare one an other speake). Propounded, not to bee a Parliament, and to make Lawes, but to give his Majesty advice and Information onely concerning husbandry, buildings, manufacture, mony, Navigation, forraigne-Comerce, American Collonys, and the naturall Racolte and Consumption of the People, vizt:

1. This Councill may consist of 200 Persons, to bee chosen by his Majesty as the very best Landed men in England, and who receive the greatest yearly Rent out of their Lands (over and above legall Charges & Incumbrances particularly lying upon the same: vizt. Joyntures, Dowers, Annuitys, Pensions, Rent Charges and extents upon Statute, Staples, Recognizances and Judgements, as also mortgages, Childrens Portions &c.) with Liberty to any Person, who thinks himself unduely excluded out of the said 200, to apply to his Majesty for remedy, And that his Majesty may every seven years thereof review and alter his said election, according to the Changes which shall happen in the Land Estates of those who were first chosen.

2. That all the freeholders of England (of which certaine Lists are to bee made and determined at the

generall Assises of Each County) may choose 100 Persons out of themselves (whereas there are now chosen but 93 for the House of Commons) to make up the aforementioned 200 to bee 300, and consequently half of the whole Assembly of 600.

3. Whereas there are now about 9600 Parrishes, whereof some are enormously greater then others, It is humbly propounded, to cut and divide so many of ye said 9600 Parrishes, as may make the even number of 12000 Presincts or Districts. And that in each District, all the males of above 21 years old, may meet upon a certaine day, to choose a certaine Person, who may represent them as to the ends above mentioned. And that 40 of the said 12 thousand, may meet at 300 convenient places (suppose 7 days after their election) to elect 300 Members for the grand Councill, to make up 600 for the whole, as aforesaid.

The Rules, Orders and Methods of Debate to be the same in this Assembly, as in the present Howse of Commons.

No. 5

Of a Generall Councill for Plantation, Manufacture, Trade, Religion, and Applotment

1. By the harth bookes devide the familyes into 9000 parts.

2. Let the men of 21 yeares old choose 9000 electors.

3. Let 20 Electors chuse a Counsellor, which will be 450 in all.

(i) Memorandum: This is a true representative of the People, viz. of all men that have lives, limbs, libertyes or effects, reall or personell, to loose.

(ii) This election may bee made without difficulty, compulsion, faction and with certainty.

(iii) Let 45 bee so chosen for Ireland; 30 for Scotland; 3 for New England, 4 for Virginia, Carolina and Maryland, 1 for Jamaica, one for the Barbadoes, one for Asia, and 1 for Africa—(In all 11)—one for Jersey, one for Guernsey—in all 13.[1]

This Councill being ye *Populus, Vox populi* being *Vox dei,* it will do well for religion and could advise and bee materiall to both houses.

No. 6

OF UNITING ENGLAND AND IRELAND BY A COMMON PARLIAMENT

Forasmuch as an Act of Parliament in England (wherein Ireland is named) bindeth Ireland, so as the act made 17 Carol. I made in England, sitting the Parliament of Ireland, did dispose of lands, tenements and hereditaments there;[2] And whereas the last Judicature for all matters in Ireland is the House of Peeres in England:

It concerns Ireland, being now no longer a conquered nation, but restored to all Civill and Military powers there, to be represented in the Parliament of England, in due proportion of members, both Lords and Commons.

Now Ireland by many computations is found in reall effects to be $\frac{1}{12}$ part of England, and consequently if England have 480 in its House of Commons, that 40 more (being $\frac{1}{12}$ of the said 480) should be added to them out of Ireland. And it is found that $\frac{1}{12}$ part of the peeres of England are Peeres of Ireland also. Wherefore the said addition of 40 Commons (and 2 Bishops) would make the very best Parliament, a safe representative of Ireland also.

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[1] These 88 councillors (45 from Ireland, 30 from Scotland, 11 from the Colonies, and 2 from the Channel Isles) were presumably to be additional to the 450 first mentioned, making 538 in all.

[2] This enactment, known as the 'Act of Subscription' (1642), provided for the repayment in forfeited lands of the money which the 'Adventurers' had advanced for putting down the Irish Rebellion.

That there are about 9600 parishes in England, whereof one ¼ part (2400) are big enough to be cut into halves, so as to make 12000 parochiall divisions.

Wherefore let all men of 21 years old in every such division meet, by himself or proxy, on a certain day or time, to chuse an elector, viz: 12000 in all.

Let 480 places bee appointed, at which 25 out of the said electors or proxies may meet to chuse a member of Parliament.[1]

Whereas in Ireland there [are] 240^{m} families, let the men of 21 years old of 200 families meet to chuse an elector viz: 1200 in all. Let the next day the said electors meet in 40 appointed places, viz: 30 at each, to chuse [a] member to be sent to the House of Commons in England.

This parliament to meet annually, or triennially, according to Law or Custom.

No. 7

An Expedient in Order to an Union of England, Ireland and Scotland

Supposing that the House of Commons in England consist of 450 members, that of Ireland 270, that of Scotland about 180, which is in all 900. Now forasmuch as the said 900 is too great a number to meet together in one place, so as each of them speaking may be heard by all the rest, it is fitt to reduce the said 900 to 600 at utmoste. And forasmuch as the people of Ireland and Scottland are but about ¼ of the people of the 3 Kingdomes, it is not just that in their Generall Assembly, representing the whole 3 nations, there should be above one quarter part of the members to be sent from Scottland and Ireland, vizt: 150 from both. Moreover because the wealth and people of Ireland, as also the present number of the House of Commons there, exceeds that of Scottland in the proportion of 3 to 2, or thereabouts, it finally follows, that 450 will represent England, 90 Ireland, and 60 Scottland in their just proportions, And yet all of them together not exceeding the convenient number of 600 above mentioned.

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[1] Thus each member would have represented twenty-five parishes.

Wherefore when a Parliament is called in Ireland of 270 Commoners, Let the house elect $\frac{1}{3}$ of them, to remaine in Ireland, in order to collect and prepare such matters as are fitt to be represented in England; And let the remaining $\frac{2}{3}$, or 180, be transmitted into England, out of which one halfe, or 90, are to be chosen there, in manner following, vizt:

Whereas there are 52 Countyes in England, each whereof doe chuse at least one Knight of the Shire, now if his Majestie be pleased to add unto each of the said Countyes, The power of chusing one, out of 2 which the Parliament of Ireland shall recomend, and if each City in England (whereof there are 26) shall have the like addition of power. Then 78 of the whole 90 will be chosen by the Shires, and Cittyes; and the remaining 12 may be chosen, either by the Great Shires, or the greate Cittyes, or the most eminent County Townes, and consequently may sitt as Members of England. Whilst the 90 which are rejected may be part in Ireland part in England, to sollicite and intend the publique concernment. By these meanes Ireland shall have its due number of members; such as were chosen by the people of Ireland, recomended by the House of Commons of Ireland, and chosen by the Shires, and Cittyes of England.

The like may be said of members for Scottland. For 75 shires and Cittyes may (there being in all 78) chuse 150 members for both nations, at two apeice.

Let the House of Peers in Ireland, chuse out of their whole number, $\frac{1}{6}$ part of the number, whereof the

House of Peers in England doth consist; and let the same be summoned by his Majesty's writt, to sit in the House of Peers in England. Let the like be done for Scotland in due proportion. And when the 3 nations are thus proportioned, and legally represented, they may, without disadvantage, freely and indifferently treate, of an absolute Union; or continue or discontinue this expedient.

And particularly the merrit of the Rebellions of each of the 3 Kingdomes may be impartially scann'd and considered.

(*Endorsed.* 4th March 1671. An Expedient for the Union of England, and Scotland and Ireland.)

No. 8

A DIALOGUE ABOUT THE PARLIAMENT OF ENGLAND (1687)

A. Shall we have a Parliament?

B. I don't know. Nor do I know what it is.

A. That's strange. A Parliament is a Discourse, *Colloquium* or Conference of the King, Peeres, and Commons, as three distinct powers.

B. But I don't know what the King is, nor Peeres are, nor what Commons are.

A. The world don't like you to be so ignorant!

B. You shall see. Some take the King to bee God's Lieutenant (2) To bee the heyre of Adam (3) To be an entire representative of all the people (4) To have right in himself to do all things which are naturally possible. Now I say if this bee so, what signify the Clergy, the Peers and the Commons? Pray do you, who are so wise, tell me what the clergy, the Peeres and the Commons of an English Parliament are?

A. They are the King's Counsellors.

B. That's nothing, and so are you and I—if the

K[ing] pleases. But to the Point: what is the Clergy?

A. The deputyes of Jesus Christ, who is God. And you said but just now, that the King was God's Lieutenant and deputy. By this reckoning the King and the Clergy are both one. May it not bee so—The King *in temporabilibus* and the Clergy *in spirituabilibus*?

B. "O," cry many, "Jesus, as the Son of the Maker of Heaven and Earth, was Lord of *Temporalia* and *Spiritualia*, and so must his deputies the Clergy bee, and ye King nothing."

A. Gadso,[1] I am out, this must not bee.

B. Well, let this pass for the present. What are the Peeres?

A. The Peeres are *Pares*.

B. To whom?

A. To one another.

B. Are Dukes and Barons *Pares*?

A. Yes. In Legislature and Judicature, but not at table.

B. But how are they by Legislature and Judicature?

A. By my troth, I know not! Tell me.

B. My opinion is that a King originally was the Generall or *Imperator* of an Army that had conquered a country, such as our William the Conqueror was. (2) That his *Pares* were his officers in the Army, that is to say men of the same sort or suite with himself, for *pares* doth not signify *Aequales*. (3) I think that *Barrones* were neere the same thing, or commissioned officers, and did make the Court Martiall, which in time of war was the Supreme Court. (4) I take Dukes to bee the same with the Mareschalles of France. (5) *Marchiones* to have been the Governors of frontier towns, and *Comites* such as the Generall kept allways about him as a Councill of War, and *Comes Palatinus* to have been as the Cabinet Counsell in these times. And all this is very naturall; for the officers of a conquering army ever were, and ever will bee, Legislators and chief Judges of the Country they have conquered.

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[1] 'Gadso' or 'Catso,' from the Italian *Cazzo* (membrum virile), was a common exclamation in the seventeenth century.

A. I like your description of a King and his Peeres or Barons. It agrees with history, reason, and nature. What do you say of the Commons—I meane the Commons of our English Parliament?

B. I say that after the Conquest, the land was divided amongst the soldiers by severall precincts called shires, and that the private soldiers, *Equites* and *Milites* [were] chosen agents or knights for setting out and planting their severall shares or lots of land, which were called Knights [that is] servants or agents of the shires. Now when the King and *Pares* saw that [they] could not live upon lands alone, but must have artisans of several sorts to cooperate with them and for them, they did encourage severall artisans to live together, to encompasse themselves with a wall, to levy common charges, to decide small controversies, to keep the public purse, And with[all] allowed these societys and corporations, to send deputyes to meete with the Knights; making up in all as great a number as, being mett in one rome, every man could heare every man speake at their constitution. This I take to bee the House of Commons, which gradually grew to the present number of 513, viz: above 100 too many.

A. Pray go back to the Peeres. Our present Peeres are not officers of the Army nor military men.

B. They are not, but are supposed to bee so; for when any man is made a Lord, wee feigne him to bee governor of some certain lease of ground, or county, or of some considerable town, fort, or park.

A. But why are not the officers of the present army Legislators and chief Judges &c., as well as those who were officers soon after the Conquest?

B. I suppose that soon after the Conquest, the officers of the army had vast leases of land, and consequently had good numbers of tenants and servants, which to have is real and naturall greatness. Whereas the present officers have onely a bare competency of pay during the Generall's pleasure; so as now they make lords of men who have gotten much land, and then feigne them to be military commanders withall.

A. It were to bee wished that all our Peeres were owners of much land, and had also skill in Military matters, and had withall the actual command of the army; that might and right should go together. Surely such a House of Peeres would not be uselesse and dangerous, as the Rump of a late Parliament called them. These were all chosen by King or Generall, but the Commons were to be chosen by the People with leave from the King. Pray explain this matter a little better.

B. I think so, but find that the bulk of the people had no choice at all of members for their representative. For these only chose those who are owners of land or formed into corporations by the King's counsellors, and are chosen according to the judgment of one whom the King appoints, and are afterwards chosen again or confirmed by the Elects last mentioned, Which Elects may be sayd to have been chosen by the King, being adjudged chosen by Judges of the King's appointment.

A. By what you say our present Commons are scarce the choice of the people, certainly not of the whole people. The King makes Sheriffs, and the sheriffs are judges who are freeholders, and of individual practices in Elections; and hee is elected Knight whom the sherif sayes to be so. Moreover hee that is chosen by the sherif is judge of other elections like his owne. As for Corporations, the King makes as many as hee pleases, and makes of them no more than hee pleases to be electors, and appoints the Judges of Elections and returnes.

B. Do you wonder at this? How is the King of

England a monarch if things were otherwise? You know our Parliaments consist of King, Lords and Commons. The Lords are chosen by the King, and so are the Commons, by the Method I have described; according to which I suppose the King will rectify all future elections.

A. The King doth not take away any man's peerage, nor doth hee take away from any corporation the right of choosing commoners. Meethinks that monarchy is thereby checqued.

B. Very little, for the King can by numbers brought into the House of Peers by extra writ, as also by empeachments, qualify them to his purpose. And he can by prerogative *purgatis exclusis*, and by preferments and browbeatings, make men do what hee pleases, or hinder from doing ye contrary; and thereby I say again hee is a Reall Monarch.

A. You have shown: (1) How the King appoints what part of the people shall elect members. (2) In what proportion the electors shall be to the rest of the people in severall places. (3) Who shall bee judges of Elections and (4) Who shall be judges of these judges in the House. From all which you conclude the King is absolute master of the elections, of the commons, and manifestly of the peeres, being thereby absolute monarch. But now lett me tell you, that Cromwell did directly choose every member of a certaine Parliament, and yet could not make them answer his desires and expectations. And wee have heard of a parliament wherein the major part of the members were perjurors, and yet they stood still at certaine passes and periodes, and would not answer expectations.

From all which I infer that t'were better [to] reduce this matter to the Law of Nature. That is to say that the chiefe of a conquering army will make his chiefe officers Legislators and soverain judges. And it is [the] best way to allow unto the whole people the freest election that can be contrived, with a lot (which is the election of God) after all. Now although this method seemes Democraticall, yet being subordinate to the army or Peeres above described, it is not, but merely consistent to monarchy. I adde that Soverain Democracy do make Monarchical Imperators and Dictators; and vice versa, absolute Monarchs do make democraticall councils for matters where all the people are concerned, of which Religion and the Revenue are the greatest.

II

LONDON

(9) About Rebuilding of London—(10) Of London, Westminster, Southwark, Fortifyed &c.—(11) London Wall—(12) An Essay for the Improvement of London 1687—(13) The Improvement of London: 1687—(14) Of the Plague—(15) Plague (Pest Houses)—(16) Concerning the Plagues of London—(17) The Uses of London.

LONDON

IN 1659, after the completion of his Down Survey of Ireland, Petty (as he tells us in his Will) bestowed part of the £18,000 he had made thereby in the purchase of the 'Earl of Arundel's house and garden at Lothbury.' The original deed is still extant and gives a plot of the ground, which shows that it was then in process of development, a 'New Street' (soon afterwards to be known as Tokenhouse yard) having just been laid out from Lothbury northwards. Petty continued the building operations which were already in progress but his houses were all obliterated by the great fire of 1666. The paper *About the Rebuilding of London* (No. 9) was no doubt prompted by the necessity of their replacement and written before the year 1672, when the work of reconstruction appears to have been begun.

Petty was, however, keenly interested in other London problems. Besides his published writings (on the *Growth of the City of London*, on *London & Paris*, and on the *Magnitude of London*) he left on this subject a number of papers, some of which are printed below. His favourite scheme was for the surrounding of London, or rather the 'Greater London' of that day, with a wall, for the double purpose of administration and defence. The Papers numbered 10, 11, 12, and 13 are all variants on this theme. The area to be enclosed is differently estimated. In No. 10 it is to be 7,500 acres with 500,000 inhabitants, but it subsequently increased to 20,000 acres with 720,000 inhabitants (No. 12), while Petty's wall grew from 65,000 to 100,000 feet in circumference. The central idea, however, remains the same, and its author may be said to have anticipated the Act of 1888 which made London an Administrative County and gave it a Council of its own. In No. 13 Petty sums up the advantages which would accrue to all concerned, namely the People, the King, and those who undertook the scheme—if it were put into force.

The next succeeding papers (Nos. 14, 15, 16) deal with the Plague, which had raged in London at intervals since the first half of the sixteenth century and culminated in the pestilence of 1665. Petty was prepared with a sovereign remedy, which was that all infected families should immediately be segregated in ' pest houses ' outside the city. He is at pains to show that the cost of housing and transportation would be a mere fraction of the loss occasioned by the wholesale death of the community. It thus appears that the ' Isolation Hospital ' was not an invention of the eighteenth century. No. 16, *Concerning the Plagues of London*, has already appeared in Fitzmaurice's *Life*, but Petty's thoughts on this subject would scarcely be complete without it. In reprinting the document I have taken the opportunity to correct some errors in the original transcription. Petty was always ready to put his ideas into practice. The concluding paragraphs of this paper show the terms on which he was willing to do so in this instance.

Among the MSS. there is a curious note headed " A Parley between L & P about the Plague." This appears to have been the outcome of a dispute between Petty and " L " (probably Dr. Lower) as to the mortality which would occur during the next outbreak. The parties agreed in placing the normal deaths from the plague at one-sixth of the population. For every person less than one-sixth " L " was to pay Petty £6, and for every death beyond that number Petty was to give " L " £5. The bet probably remained undecided; for, though it was not realized at the time, the Great Fire of 1666 had solved the problem. It destroyed the most insanitary portions of the City, and when these had been replaced by new buildings, though there were a few sporadic outbreaks, the plague never again recurred in serious form.

The last paper, No. 17, is a recital of the *Uses* (or advantages) *of London* (after it had become a county and been enclosed by a wall) over all the cities of the world. London enjoys all the advantages to-day—including the County Council—though they have been obtained without the assistance of Petty's proposed circumvallation!

No. 9

ABOUT REBUILDING OF LONDON

A Computation of the late losse per the fire

Of the charge to rebuild so many churches as are now necessary in lew of those that are burnt. The like of Halls, Exchange, Guildhall, and other publique places. The value of the dwelling houses. The charge of buildinge new brick houses of equall receipt, capacity, or strength with those destroyed.

The rent of the ground wasted by the fire for the tyme it will probably continue wast. The Rent of water houses and waterworkes.

The Extraordinary gaine of porters, labourers, Carmen &c per the fire. The Rent advanced in the preserved houseing, and the extraordinary paines of the preserved wards. The gaine of the ends.

Of the people killed, burnt, starved, & disabled to worke and follow theire trades. Of the people withdrawen from London already, and how many men probably will [be] within 1, 2, or 3 years. What townes in England and abroad will gett into the Trades disabled at London per the fire, and whose trades will be advanced by the losse of goods and wares there. Of the losse to the Commonwealth thereby—To the Kinge, the Church and Parishes, other Corporations & hospitalls, particular persons. Of the number of families and persons sufferinge thereby directly & Indirectly.

Comparison of this losse with That of the late Civill Warr for 20 yeares, That of the Late Plague, the present warrs with ffrance and Holland. Distinct [and] Compound observations uppon all the 3 Incumbent Calamityes of the Plague, warr & fire.

Of the advantages that parishes, parishans, monopolids, and proprietors doe usually make, and endeavor to make, uppon these occasions.

Of the Contrary Inconveniencies which arise from parishes (?), and from nonconformity of men to the methods and order propounded for repair of such calamities. Of delayes and other mischeifes of dealinge or treatinge with multitudes.

An enumeration of what things must bee knowne before any Modell can bee made. A Conjecture what & how much will be built, and in what manner, within

7 yeeres next to come; consideringe the present state of affaires and the tempers & Intrests of persons and parties.

A view of all the Inconveniencies taken notice of in the late frame & state of London. The like view of all the ends which are to bee answered or Compleyed within the Moddell.

Consideration about peecinge the new worke to the old. Of the severall Qualities of men that must bee consulted with about the moddell.

An idea or Moddell for rebuildinge the Citty: Supposeinge all the ground and Rubish were some one man's who had ready mony enough to carry on the worke, together with a Legislative power to cut all Knots.

Estimate of the Time wherein this Modell could bee executed at soonest. Money, Materialls, Workemen, Requisite to performe ye same within that tyme, and to be had or made. The proportions in measure, weights, & price of all the said materialls. The number and proportions of each sort of Artisans.

An enumeration of the severall restraints and prohibitions necessary or convenient for the worke, and in what measure each of them are good otherwise harmlesse, tollerable or Intollerable, that is hurtfull above the advantage.

In what tyme each sort of necessary tradesman might be made out of a youth of 18 yeares old? What trades now in use, and which will most easily transmigrate in the trades of buildinge, [and] may be found to hasten this worke?

Of the severall Cases that will arise in naturall equitie and Justice, through occasion of the fire, vizt: uppon the propreity in houseinge ground and Rubish. Leases & Mortgages, Debts & Covenants. Deposited goods. Salvage of goods. Losse of writtings and evidences. Impoverishment of Debtors. Apprentices that cannot serve out theire tyme. Thefts of goods [that are] not knowne propriety.

Politicall considerations

Whether the place of London be the best for a metropolis, if it were absolutely free to chuse it? What other places may compete with it for naturall advantages? Whether there be a proportion betweene the people that may be permitted to live togeather in the metropolis and the rest of the whole people? Supposinge there bee, what are the causes and consequences of the said metropolis growinge more or lesse populous, than in such proportion?

Supposeinge London the place, and 500^{m} the number of people fit to cohabit there, what ought to be the quantitie, figure, and situation of ground of such a Citty, accordinge to the present state of affaires, and the changes that may probably happen within 100 yeares next to come?

Whether the rebuildinge of as much housinge as was burnt be necessary? If it be, whether buildinge it uppon more or equall ground be best? Weather uppon the same or other equall [ground]? If uppon the same, how the streets may be widened and accomodated to the present state of things.

Of certaine Rivers which may with profitt be made navigable if the Citty be vigourously rebuilt,—which before could not. Of wayes which will now beare the charge of beinge made broad, hard, and even, for the better transport of materialls.

What assistance the Kinge can & may prudently give towards this worke? Whether it be for the advantage of the whole Nation even to be taxed for the speedy rebuildinge of London, as within 7 yeares? How such tax may prove to be but a meere loane, and be repayed to the people with advantage. How the bestowinge of 3 millions upon the rebuilding of London, may be as effectuall to the Trade of the Nation as the Importinge of above as much Bullion. How such a method would raise the Rents of the Lands in England $\frac{1}{8}$ part. How London may be rebuilt without lessening any of our exportable manufactures and the Trade which was before the fire.

Rules and considerations for the valuation and ballances of propreties in case they should be confounded. Of the smallest alterations that can be made. The matter of propreities.

(*Endorsed.* "Heads about Rebuilding of London.")

No. 10

OF LONDON, WESTMINSTER, SOUTHWARK, FORTIFYED &C.

1. By London is meant an ovall piece of ground, whose length is from Blackwall to Vauxhall, and whose breadth is half of the said length.

2. This ground contaynes about 7500 acres, whereof about 1500 is built and 6000 field, worth 40*s*. per acre at least.

3. There are on this ground 80^m houses, worth 20£ per annum one with another.

4. There are above 500^m soules inhabiting the same, among whom are above 80^m able to fight.

5. The sayd ground contaynes all the shipping &c.

6. It spends 300 chaldron of coales brought in from the sea.

7. Is supplyd with water from Ware, the Thames, and springs within the said ground.

8. It contaynes Merchants and artisans of all sorts, fit for war or peace, and all provisions for the same.

9. One half or 700^m of the King's Revenue arises and is payable from thence.

10. A Wall of 12 miles or 65^m foot about, will fortify the said ground artificially.

11. 10^m men will man the said wall at 6 foot to a man.

12. The forts at Sheereness, Tilbury, the Tower

and Windsor will countenance (?) the river, which must have a new bridge at Lambeth.

13. 100^{m}£ will defray the charge of this wall, which may be finished in one sumer.

14. His Majesty's present forces of 2000 horse and 3000 foot will suffice for the Citadells of the said wall, and the charge thereof will be 120^{m}£.

15. The Merchants of London do ingrosse all the seamen of England and Navall provisions.

16. 5000 horse moving in the country, and 20^{m} foot which London can raise, can do anything in England.

17. The 3 cittyes of London, Westminster, and Southwark, are governed actually by the King.

18. No papist to live with[in] the wall, nor approach.

19. Otherwise Liberty of Conscience, and the people to pay their priests and parsons as they please.

20. Law-suits for within this ground shortned.

21. The land and housing to bee embanked, and the credit thereof let to Interest.

22. Every 2000 men in London to send a member to each House of Parliament, or the Council of Trade; sending in all about 80 or 90 members.

23. London to bee divided from Westminster by a line run North from the Temple to the wall, with [a] small wall thereon.

24. Exact accompts to bee kept of the peoples, trades, religion, wealth, sex, ages, marriages, births, burialls, housing, wealth, shipping of the City or 3 Cittyes,[1] with a perfect rule to raise taxes by.

25. One common Council for the 3 Cittyes, and freedomes renewd.

The expence of the 500^{m} people in London is about $\frac{1}{3}$ of the whole nation, which is 45 millions, (for the expence of London is $\frac{1}{3}$ of the whole). Besides the expence is 10 times the house rent which is 1500^{m}. Wherefore London can at one 20th part of the expence beare 750^{m} per annum and $\frac{2}{3}$ of the customes which [is]

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[1] *I.e.*, London, Westminster, and Southwark, *ut supra*.

260^{m} more. Besides 90^{m} is received there as small branches of the revenue. In all 1100^{m}; enough to defray the whole government.

London embanked is security for 15 millions which at 1 per cent. yields 150^{m} per an., enough to defray the guards of London.

The 6000 field acres of London will rise to double, and bee good for 4000 villas of pleasure.

No. 11

LONDON WALL

A wall of 100^{m} foot in circumference, 11 foot high, 2 brick thick, in a fortification figure, with 20 gates, worth 20^{m}£.

(1) To bee a certaine visible boundary of property and impositions.

(2) A small defence and enforcement to approved men (?) and banishment.

(3) For wall fruite.

(4) For a fence to 20^{m} acres of ground.

(5) To take an accompt of all persons and things going in and out of the Citty.

(6) To plant necessary garden stuffe [for] food, milk and cowes.

(7) To dennote the Citty of London.

(8) To have a list (?) of a furlong without houses next the wall, to be all garden for the Kitchin.

(9) To encrease the value of enclosed lands.

(10) A foundation of libertyes, securityes, and priviledges.

Priviledge to Inhabitants within the Wall

(1) No hay nor corne to grow within it.

(2) Men for crimes may bee put out of it.

(3) Every man of 21 yeares old to have his voice in electing the Minister [and] Justices. Traynbande

men. [To] License beggars. Provide for Impotents. Prison Keeper. (The owners of the ground upon which the wall stands to pay half; and the owners of all unpaid (?) ground to pay the other half by the acres.)

(4) The justices so elected to choose parliament men.

(5) [Inhabitants] Not to be sued but within the walls.

(6) To have the benefit of hospitalls and work houses.

(7) To exercise any trade, with exclusion to such as are not free or inhabitants.

(8) Mony to be ascertained and preserved from abuses.

(9) Not to be imprisoned, but put to servitude.

(10) Infected with the plague to bee carryd out.

(11) To borrow mony upon responsible security and interest.

(12) Tythings to enforce for their members.

(13) Care for Easements, Annoyances &c.

(14) Ban within the wall, who to beg or perish (?).

No. 12

An Essay for the Emprovement of London

1687

Although many good conjectures have been made of the people, housing, burialls, &c. of London which onely authority can ascertain, Wee shall (in order to the emprovement of London) proceed upon the severall suppositions as following concerning the same: vizt:

1. That in the 137 parishes already contayned in the bills of Mortality, and in [the] parishes of Deptford, Greenwich, and Bow, hereafter to bee added, there are 108^{m} houses or 120^{m} families.

2. That a wall of 100^{m} feet will encompasse all the said 137 parishes and 20^{m} statute acres of land, and

may be built strong enough for one man within to defend against 2 without, for 10*s*. the foot.

3. That the full ground within the said 137 parishes is 2500 acres, and that the streets, foreyards, backsides, and gardens belonging to the same, is as much more. In all 5000 acres.

4. That the Rent of the said 5000 acres, and the 15,000 acres to bee enclosed, is 400^{m} per annum, worth 8 millions; and the rent of the superstructure 1000^{m}, so worth 10 millions.[1] In all 1400^{m} per annum for the said 108^{m} houses, at —— each one with another.

5. That the number of registered burialls within the said 137 parishes are 24000, of registered christenings 15000, and of marriages 4000 per annum.

6. That the People of the same, men, women, and children, are 720^{m}; whereof 180^{m} are males of between 16 and 60 yeares old able to beare arms, the $\frac{1}{10}$ whereof may be of the Traynbands, and 54^{m} of the experience favorable, within the wall above mentioned, to defend [it] against above 100^{m} beseigers.

7. Of the said 720^{m} soules, 140 are teeming women of between 16 and 45 years old, who may beare 40^{m} children per annum, or above double the present number.

8. Of the said 720^{m}, 600^{m} are above 10 yeares old, and able to do some kind of work.

Upon these suppositions, and that the late charter of London is now lost and other circumstances; it is proposed:

1. That the ground within the wall bee made a Diocese, consisting of 400 parishes of 300 familyes in each; to have one common service and prayer, with liberty of worship and opinion in matters purely spirituall, with a more certain way for Maintenance of the lazy and Poore therein.

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[1] Petty apparently calculates land at 20 and houses at 10 years purchase.

2. That the same bee made a County, with uniting the common Law and Chancery, without termes (?) and the speedy tryall of criminalls.

3. That for every parish be a Justice [of] the Peace. That 400 Justices chose 40 parliament (?) men or Aldermen for governing and representing the citty, out of which 40 a mayor and 2 sheriffs are [to] bee chosen, and that this common Council choose the 18000 to be of the Militia.

4. That there bee a Generall of all the force and arms and fortifications relating to the Citty.

5. An admirall, who is to keep an exact account of all shipping belonging to, or trading with the Citty, of all Watermen &c., and of all Navall provisions and ordnance, and to be judge of all maritime cases and navall matters with fit assistants, one to regard all seamen and Naval rations (?).

6. That there bee a Bank Master to manage usury and exchange and coynage, upon the fund of the ground rents.

7. A Surveyor Generall of buildings, pavings, lights, bridges, streets, common shores,[1] highways and scavenging, and carriages.

8. That there bee a Councill of Health viz. for the Plague, acute and epidemicall diseases, aged foundlings, as also for persons and houses of correction, and all sorts of hospitalls and women in child-bed.

9. A Council of Trade for regulating plantations, manufactures, land and water carriage, enforcing dutyes upon goods, excise &c., and also for all forain Trades and the ballances thereof.

10. A Council of arts, Mathematicall, Mechanical, Natural extending to all artisans and artists whatsoever, to answer the ends of a Royall Society and all the Trademen's Halls.

The King to have an immediate correspondence and influence with and upon the Governors property, and other of all the said 10 Councils and authorities.

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[1] Sewers.

The advantages which may bee expected from the above reformation and assessment of London are:

1. The ground rent of the said 20^{m} acres of London will be advanced enough to defray the charge of the wall, gates, and a New Bridge nere Lambeth, and perhaps to new pave the Citty in a better maner.
2. The bounds of the City and all impositions will by the wall bee ascertayned, and the meanes had of knowing who goes in and out, and of taking such tolls and dutyes as shall bee allowed, as also for defence and saving it from bomb[arding].
3. The bank of 8 millions may yield a profit 300^{m} per annum.
4. The administration of the law will save the people in expence &c. some —— per annum.
5. The forces of London, with the force of each particular county, is able to defend England from any foran invasions and suppresse any intestine commotion.
6. If the plague can be lessened, the profit thereof will bee half a million per annum at a medium.
7. On the multiplication of mankind by the marriage of teeming women, 900^{m}£ more.
8. The charge of the Clergy lesse, and poore better cared for.
9. All Arts and Trades advanced.
10. An example [for] representing [to] the rest of the nation.

No. 13

The Emprovement of London: 1687

If London (viz. 120^{m} families and 20^{m} acres) bee enclosd, a new bridge made, and an hospitall for 1000 sick instituted, These advantages will follow, vizt:

To the people; by making the same by bounds & defence

(1) A Dioceze.
(2) A County.
(3) an Universitas.
(4) an Emporium.
(5) a Corporation.
(6) for lessening the Plague.

To the King; by making it

(1) a speciall fund or branch of his revenue.
(2) a Citadell to the whole state.
(3) a Magazin for land and sea forces, and provisions.

To the King's subjects and Undertakers

(1) A Bank of creditt for 7 million of money.
(2) An emprovement of the ground rents of 20^m^ acres.
(3) The building of the Wall, Bridge, and hospitall.
(4) The honor of effecting the same.

No. 14

Of the Plague

1. Of the intervalls of Plague.
2. The quota that dye.
3. The numbers of the people.
4. The value of the same.
5. Of shutting up and Pest houses.
6. Of the time of rising and falling.
7. Of water.
8. Of leaving the cittye and wide roomes.
9. Of Rich people and undertakers (?).
10. Of Medicine in the plague.
11. Of 10^{m} small separate houses within 15 miles of the Citty.
12. Of carriages to and from these houses.
13. Of chosing these houses and substitutes.
14. Of burialls.
15. Of discovering the Plague, and time of removalls.

16. A theory of the Plague, Pneumatic (?).

17. A tax for the poore within the wall, and who shall bee retained.

18. *Q.* How many dyed of the Plague within 20 miles of London, when there dyed 97^{m} within it, and in what quota?

19. That which dye above 24^{m} do dye of the plague.

20. And what dye fewer than 164^{m} were saved by this contrivance.

21. Take an accompt of the people, ground, and houses, among which the Pest houses stand, and of their extra and ordinary burialls in the same.

22. N.B.—A *Civitas* about London of 18 miles radius contaynes as many people as London.

No. 15

Plague (Pest Houses)

1. Let there be a circle of ground about London (20 measured miles, equally distant from the Monument), and a list of the parishes which, or the greater part of them, lye within the said circle.

2. Whereas probably there bee 30^{m} houses within the said circle, let 6^{m} of them bee chosen out as fittest to receive persons supposed to bee sick of the plague, and an appointment made where the dwellers in the same shall go, when their houses are called for for the cure of the plague.

3. Let the just prices bee settled for the hire of such houses, out of which the dwellers are to bee removed, and those whereto they are to go.

4. Let cariges bee provided to carry the infected from London to their Pest Houses respectively, begining with the nearest, or as the patient desires.

5. Let matrons and chirugions bee agreed with to attend the sick so removd; the charges to bee general.

6. Let Medicaments bee generally approvd by the best advice.

7. Let removalls bee made from London, not onely when any person is dead of the plague, but when the manifest symptomes appeare.

8. Let the dwellers in the infected familyes of London go to severall pest houses, if they please.

No. 16

Concerning the Plagues of London

1. London within the bills hath 696^{m} people in 108^{m} houses.

2. In pestilential yeares (which are one in 20), there dye $\frac{1}{6}$th of the people of the plague and $\frac{1}{5}$th of all diseases.

3. The remedies against spreading of the plague are shutting up suspected houses, and [making] pest-houses within $\frac{1}{2}$ a mile of the citty.

4. In a circle about the center of London of 35 miles semi-diameter (or a dayes journey), there live as many people and are as many houses as in London.

5. Six heads may bee caryd a days journey for 20*sh.*

6. A family may bee lodged 3 months in the country for 4£, so as the charge of carying out and lodging a family at a medium will be 5£.

7. In the greatest plague wee feare, scarce 20^{m} families will bee infected, and in this new method but 10^{m}; the charge whereof will be 50^{m} pounds.

8. The People which the next plague of London will sweep away will be probably 120^{m}, which at 70£ per head is a losse of 8,400^{m}, the half whereof is 4,200^{m}.

9. So as 50^{m}£ is ventured to save 4,200^{m}, or about one for 84.

10. There was never a Plague in the campagne of England by which $\frac{1}{6}$th of the people dyed.

11. Poore people who live close, dye most of the plague.

12. The Plague is about 3 monthes rising and as much falling, which cold weather hastens.

13. Killing dogs, making great fires in the street, nor the use of medicaments are considered sure; for which everyone by common directions may bee theire owne Physicians.

14. In the circle of 70 miles diameter, choose 10 large wide roomey disjoyned houses, with water and garden to each; the Inhabitants to remove at 7 dayes notice.

15. Convenient wagons or coaches to bee prepared to carry away the suspected.

16. A method to furnish the pesthouses with medicines for theire money.

17. Bookes of devotion for every house.

Proposalls.—When 100 per week dy, the Plague is begun. If there dye fewer than 120^{m} out of the bills, of all diseases within a yeare after, then W. P. is [to] have 20*sh*. per head for all lesse and to pay 10*sh*. per head for all above it.

Every family removed being to provide 10£ for the charge of going and coming, and of 4 monthes rent. Or a gratuity of 2000£ with W. P. his ensurance.

(*Endorsed.* "Of Lessening the Plagues of London, October 7, 1687.")

No. 17

The Uses of London

How by the present greatnes & state of London, to make it supply the use of forain Travell to the Youth of England.

It is expected that the 134 parishes already calld London, & 2 or 3 more, will contayne in all perhaps

800^{m} people, 120^{m} familyes, in 108^{m} houses; will be encompassed with a Wall of about 20 miles about, enclosing 20^{m} acres of Land, and that the same Enclosure shall bee made a county & diocese, and that hospitalls of all sorts will be erected within the same &c. I then say:

1. That within a Wall or Citty contayning 800^{m} heads, 'tis more likely to find able men by nature & art than in any lesser number.

2. That by the liberty of Conscience, There will bee a further discussion of all Theologicall matters & better Experiment made of the effect of severall faiths & persuasions than elsewhere.

3. The Hospitalls, gardens, & laboratryes of this place may well exceed any in the world in order to the art of Medicine.

4. This Citty will have Courts of Municipall, Civill, Common & Sea Law, of Equity, of honor, of Conscience, concerning mony, Lives, limbs, libertyes, lands & personall Equity, and the art of governing so vast a people in peace & plenty.

5. The Exchange of London will furnish men every day who have fresh concerne & correspondance with all parts of the knowne world & with all the Commodityes growing or made within the same.

6. In this Citty will be found store of men skild in all languages of the world, in all speculative sciences & practicall arts, among the great numbers whereof some must bee very excellent.

7. At the Royall Society mathematicall, mechanicall, & Naturall learning will bee much emprovd.

8. There [will] bee all Examples (?), Playes, Entertainments, of the shewes of Nature & Art.

9. There will [be] the Court of the King of 3 Kingdoms, & [men] who have dominion & Interest in all the 4 quarters of the world, & Ambassadors from all Princes & States.

10. There are faire Collections of all natural &

artificiall rarities, with coments upon them and applications of them.

11. All that belongs to Shipping & Gunery may bee exquisitely learnd, & other military discertations.

12. This Citty contaynes People—neere the Court, neere the Exchange, neere the Inns of Court, in St. Giles in the field, St. Giles Criplegate, Spittlefields, Southwark, Wapping &c.—as different as in 8 severall cittyes or nations.

13. There is no place perhaps upon Earth where one may enjoy all Meates, drinkes, & Clothings, which the whole world affords & at better rates than at London.

14. In no Cittyes There is greater liberty at the Court, in St James & Hide parks, in Churches, at Theaters & elsewhere, to see beautifull Women with & without Impunity.

15. In no place so great variety of drinks: viz. of sorts of waters, beeres & ales, syder & juices of fruite, of wines from all Countryes & of distilled spirits & essences, than at London, and also of bathes & medicinall springs.

16. Such rivers, villes, so healthfull ayre & temperate weathers.

17. So great convenience for boates, Coaches, postage, & travelling from London to the other great cittyes.

III

IRELAND

(18) Another More True and Calm Narative of the Settlement and Sale of Ireland—(19) The Ship of Ireland between Scylla and Charybdis—(20A) Advertisement—(20B) The State of the Case between England and Ireland—(21) Of Reconciling the English and Irish and Reforming both Nations. 1686—(22) A Proposal how the English may Buy Out the Interest of the Irish Papists in Ireland and Advance the Roman Catholique Interest in England—(23) A Problem (1687)—(24) The Case & Condition of the Protestants in Ireland anno 1687.

IRELAND

PETTY'S connection with Ireland dates from 1652, when he first landed in that country, as Physician to the commander-in-chief, General Fleetwood, and to the Parliamentary army. Two years later he obtained the contract for the 'Down' Survey of Ireland, of which he has left us the *History*, published by Sir Thomas Larcom in 1851.

The Survey was completed long before any of the papers in the following chapter were written. I shall therefore not allude to it further. It was, however, as a result of these activities that Petty became the possessor of large areas of Irish land, and a frequent visitor to that country after the survey had been finished. This in turn led indirectly to his appointment as President of the Irish Admiralty Court, and fixed his residence in Dublin from 1676 to 1680. His *Political Anatomy of Ireland*, written before 1680 though not published till after his death, shows how thoroughly he became conversant with Irish affairs.

The papers collected in this section are of later date, and seem for the most part to have been prompted by the change of policy in Ireland consequent upon the accession of King James II. By the Cromwellian Settlement some two-thirds of the total area of Ireland was declared 'forfeited' by those who had risen against the English government. The land thus forfeited was allotted, in part to the "Adventurers" who had found the money, and in part to the army which had supplied the men for the suppression of the Rebellion. This Settlement was afterwards ratified in its essential features under Charles II, by the Acts of Settlement (1663) and of Explanation (1665

There were some signs of fresh trouble in Ireland towards the end of King Charles's reign, when the leanings of that monarch towards Catholicism had become definitely pronounced. It was not however till after his death that the holders of land under the Settlement became seriously alarmed. The new monarch made no secret of his intention of promoting the Catholic, as against the Protestant, interest in Ireland and elsewhere, and gave *carte blanche* to his Viceroy, Tyrconnel as to the means to be employed. Tyrconnel set about the work with a will, and the results soon became painfully apparent to the Cromwellian grantees. Their titles began to be questioned by new claimants, their rents were withheld, the law sided with crown, judges and juries would not convict, while the market value of land fell and some began to leave the country. Petty's correspondence with Southwell gives a vivid impression of Protestant anxieties at this time. He had been on friendly terms with the Duke of York and appears to have had constant access to King James II. He thought he might somehow stem the torrent which was threatening to engulf the Settlement—and with it his own possessions in Ireland. But he evidently saw that it was no use making any proposal which ran counter to the King's Catholic proclivities.

As early as 1671 (*vide* Fitzmaurice, 277) Petty had advocated a Union between England and Ireland, and as we have already seen (*supra*, No. 7) he had various plans for their representation in a Common Parliament. In his *Political Anatomy* he had coupled his proposed Union with a scheme for 'transplanting' 200,000 inhabitants from either country (Hull, 154-162). He afterwards developed these ideas on lines which he hoped would secure the Royal approval. King James's Catholic subjects were numerous in Ireland but few in England. Petty therefore increased his proposed transplantation of Catholics from his original 200,000, first to 500,000 (100,000 families) and finally to 1,000,000, out of a total Catholic population estimated at 1,300,000. He pointed out that by this scheme the number of Catholics in England would be augmented as one to thirty-five, thereby strengthening the Catholic interest where it most required reinforcement. At the same time he drew glowing pictures of the increase in revenue which would accrue to the sovereign in both countries. All this, and a great deal more, was duly placed before His Majesty in a paper entitled the *Weight of the Crown of England* (*infra*, No. 78), but the King did not fall into the trap. It was 'well taken' though (as Petty bewails) 'without getting better butter to my parsnips or hobnailes for my shoes.' 'The good ship *Settlement*' which he described to Southwell as 'top heavy & lop sided,' was thus for a time submerged—and Petty did not live to see it refloated by the Revolution.

In a later section (*infra*, Chapter X) I have collected, under the heading "King James II," a number of papers containing proposals and suggestions made by Petty during the reign of that monarch. The scheme for Union and Transplantation will be found in most of them. It figures likewise in the *Treatise of Ireland*, written in 1687, and printed for the first time by Hull from the Southwell or Nelligan MS. in the British Museum.

It should perhaps be pointed out that Petty's transplantation scheme (within limits) would not have appeared to his contemporaries quite so fantastic as it does to us. There had been 'plantations,' with their necessary corollary of 'transplantation,' in King's County and Queen's County in 1555, and in Ulster in 1603, while Cromwell's Settlement, though never carried out in its entirety, was founded on a general transplantation of the Irish to Connaught and a 'plantation' of English soldiers in their stead.

Of the papers which follow, No. 18 contains Petty's reply to an anonymous pamphlet entitled *A narrative of the Sale & Settlement of Ireland* which had been published in 1685 and was believed to have been inspired from high quarters. Petty was urged by Southwell to answer it, but at first declined, maintaining that since the Duke of Ormond and Lord Clarendon were the persons principally impugned, their defence should come from their friends (*Corr.*, 8th September 1685). There are in the MSS. several copies of a document dated 1685 with the following heading: "Whereas some persons have given out that a certain narrative of the Settlement & Sale of Ireland and 12 Quaeries signed G.F.D. are unanswerable. These are to give notice that there is an answer to those peeces in 8 chapters undermentioned, but suppressed to prevent Animosities, till leave be given for publishing the same." There follows a synopsis of the proposed argument in eight chapters. We must assume that 'leave' (? from the King) for the publication of the proposed treatise was not obtained, for it does not figure among the Petty MSS., and its place seems to have been taken by the *More true & calm narrative* which was sent to Southwell two years later (*Corr.*, 16th June 1687). Southwell's copy of this paper is in the British Museum (Ad. MS. 21168), but differs in no respect from that among the Petty MSS. which I have used.

In No. 19 Petty states the dilemma between conciliation and repression, which then, and has often since, confronted the British government in its relations with Ireland.

No. 20 commences by a recital of the 'state of the Case between England & Ireland' which leads up to Petty's great panacea of 'Transplantation.' The *Advertisment*, in which he speaks of making Ireland a "Free State," is on a separate sheet of the MS., but is of the same date as the rest of the paper, and seems to belong to it.

Nos. 21, 22, and 23 are further developments of the Transplantation idea, as a means of 'reconciling the English and Irish.' The plan formulated in the second of these papers constitutes a rather curious inversion of modern Irish Land Legislation, both in theory and practice. The Land Purchase Acts of recent times were expressly devised in order to eliminate the (mainly) Protestant landlord, and to replace him by the peasant proprietor. Their secondary aim was to throw open for the purpose of tillage some of the ranches or land hitherto used for grazing cattle. Petty, on the other hand, suggested a method of buying out the Catholic landowners of his day, and proposed to transfer them all to England, leaving only a few 'herdsmen & dairy women' in Ireland. He would, in fact, have converted the whole country into one large 'cattle ranch'!

No. 23 is statistical, or rather shows the statistics which would be required and the various problems which would arise, if the Transplantation scheme were to be put into effect.

No. 24 is in the form of a Petition to the King, and contains a general argument for maintaining the Settlement of 1663. Petty purports to show that in one way or another the grantees under that settlement had paid six times the value which their lands commanded after the Irish Rebellion. He laments that through the agency of unfriendly Judges, Juries, and Sheriffs, the Protestants are now 'wholly extinguished & made insignificant' and that there is no one left 'to drive the nation's Trade.' This paper is dated 1687 and its context shows that it must have been written very shortly before Petty's death at the end of that year.

No. 18

Another More True and Calm Narative of the Settlement and Sale of Ireland

1. Upon the Breaking out of the Rebellion in Ireland in October 1641 there was, soon after, an Act made in England for suppressing the same:

> 1. By inviting men to advance money for that purpose by way of adventure, not to bee repaid till the same was supprest.
>
> 2. By committing the management of that war to that Parliament.
>
> 3. Nor to forgive any forfeitures, but by its authority.

Upon this Act about 300^{m}£ was *re verâ* paid in, but how disposed of is not so well knowne.

2. Certain Soldiers, about June 1649, pretending the Authority of the said Act, did suppresse all Partys in Ireland that did oppose them, before the 26 of September 1653; and the said Soldiers did accept of part of their pay in the method and manner of the aforementioned Adventurers, and their arrears to the said 26 of September were exactly stated to the meanest soldiers accordingly, amounting to about 1100 thousand pound.

3. After the said 26 of September, 1653, the Lands which (Anno 1641) did belong unto all the Roman Catholiques of Ireland supposed to bee forfieted, were admeasured according to the Intention of the aforementioned Act, and Lands sett out in satisfaction of the said Adventurers and Soldiers; some Adventurers being left deficient, and some of the Soldiers being wholy deficient also, and some but in part satisfied. Some according to a quota of 4*s*. 3*d*. in the pound, and some 12*s*. and 3*d*.

4. Memorandum: That together with the aforementioned satisfactions, some Lands were sett out for monys paid upon the Doubling, Illegal Ordinances,

and for Service don to the Parliament against the King in England. Where note also, that many of the Legall Adventurers, and of the Soldiers who had servd in Ireland, were Regicides, Halberteers, and such as had vehemently servd against the King, both in England and Ireland.

5. About the years 1659 most of the said soldiers then remaining in a Body, and in a form'd Army, did by a generall convention then calld in Ireland, submit to the restoration of King Charles the 2^{d}, and sent Deputys to his said Majesty at Breda, purporting the same. Unto whom his Majesty promised Confirmation of such forfieted Lands as had been sett out to them, and of which they were possest the 7th of May 1659, and a Reprizall for what they possessed which should upon tryall appeare not to bee forfieted, or to that effect.

6. The King upon his returne into England, exempts the Irish Rebellion out of the Act of generall Pardon, yet intimates his Pleasure that after the Adventurers and Soldiers were satisfied and reprisd, hee would restore about 36 Persons, commonly called *Meromotu* men,[1] of his Free Grace, to the Estates they had Anno 1641. (2^{d}) That Hee would restore about 200 of those who had servd under him as soldiers in forain parts,[2] after some other Intrests mentioned in his Declaration were satisfied, allowing them forthwith to enter upon such part of their estates as had not been disposed of or alloted to Adventurers and Soldiers.

7. Whilst these Intentions of confirming and restoring were in agitation, It hapned as followeth:

(i) That all the Commissiond officers who had served in the war of Ireland, from October 1641 to the 6th of June 1649, should bee satisfied their arrears: (*a*) out of forfieted Lands in the County of Wicklo, Longford, and Dunagall; (*b*) out of forfieted mortgaged Lands, not disposed of to the aforementioned Adventurers and Soldiers, (*c*) out of forfieted Lands lying within the mile line. (*d*) Out of forfieted Houses within walld townes and Corporations.

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[1] *I.e.*, men restored by Letters Patent of which *mero motu* was a phrase.

[2] The 'Ensign' men mentioned below.

(ii) That all forfietures of Estates held from the Duke of Ormond should enure to his benefit.

(iii) That the Decrees made at Athlone to *Constant good affection men,*[1] and to such Irish who had Compensations in Connought and Clare for what Lands they had in the other 3 provinces, should bee confirmed to them and their Assignes (commonly called the *Connought Purchasers*), and that satisfaction should bee given to the Intent [of] Decrees which had not been actually satisfied.

(iv) That the Revenues of severall Bishopricks and the Colledge of Dublin, the Corporations of Bandon and Kinsale, and the Fort of Duncanan, should be augmented by forfieted Lands.

(v) That the services and sufferings of A.B.C.D. should bee rewarded in an extraordinary manner by forfieted lands also.

(vi) That extorting the Articles of 1648 from the King in Prison[2] was made rather meritorious than punishable.

(vii) That the Irish Catholiques were to bee made guilty of the Rebellion onely by the Treasonable Acts which those who had the Lands could prove (in the yeare 1663) them to have been guilty of, between the 23rd of October 1641 and the 15 of September 1643, when the Cessation was made. Which 2 last matters, with the forgerys and perjurys applyed unto them, did beyond all expectation, lessen the forfietures. As the rest of the Cawses aforementioned, did divert the application of the remaining forfietures from the intended restoration of the *Mero-motu* men and *Ensigne* men. For that the *Mero-motu* men could not bee restored till the Adventurers and Soldiers were satisfied, according to the King's promise at Breda, and the *Ensigne* men could not bee restord untill the other supervening Intrests above mentioned were satisfied.

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[1] *I.e.*, men who were able to prove that they had shown 'constant good affection' to the King.

[2] Articles of Peace granted by King Charles to the 'Supreme Council' in Ireland shortly before his death.

8. Memorandum: That the King was drawne to the above Concessions, by raising his Quitrents from 40 to 65 thousand pound per annum, and 300^{m}£ was raised from years values and supplements; whereof the 49 Officers[1] had 100^{m}£, the Duke of Ormond 50^{m}£, and the rest [were] disposed of to A.B.C. and D.

9. When the Court, who sat in Summer 1663, for the tryall of Innocence,[2] had within their period heard 820 claymes and adjudged —— of them to bee Innocent, the English Party finding it impossible for them, being strangers, to prove how the Irish behaved themselves above 20 years before (against the many wittnesses and Command of Oaths, which the Irish had), were brought, rather than to proceed further in that way, to retrench $\frac{1}{3}$ of what they possest the 7th of May 1659; and to allow of the Decrees of Innocence made after the 22th of July 1663; to allow the Possessions of the *Letterees*[3] and to allow the restorations of 54 Persons, commonly call'd *Nominees*,[4] to their principall seats and 2000 adjacent acres. And the Irish on the other side got speciall Provisoes for being restord, and new Grants of Land which never belonged unto them.

10. In the meantime the Adventurers, Soldiers, and others retrench for their "Thirds," lands scarse worth

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[1] Officers who had served under the King in Ireland before 1649.

[2] The Court of Claims. Petty states elsewhere that seven in eight were adjudged 'Innocent.'

[3] Those restored to their former possessions by virtue of special letters from King Charles II.

[4] Those restored by name in the Act of Settlement.

the Quitrents and which no man would accept for "reprisalls"; but [land] was given out to St. Theophilus Jones[1] and others—not acre for acre, but according to such values as their Friends would rate them at.

11. These extraordinary Grants were obtained by both Partys, by telling the King that there was a vast number of acres undisposed of; meaning vast scopes of Land in Kerry reckoned by willfull mistake, against common sense and Reason, by the Extreame Collumne of the Downe Survey;[2] according to which measure, the said Lands were not worth above the 10th part of the Quitrents chargeable upon them. And withall, the King (to facilitate his granting away of mony) was also told, what a vast revenue he had, meaning the Quitrents of the said Lands, according to the said mistaken measure, which no Rigour could ever levy, but ruin'd the country in attempting it.

12. It was also the practis of many to buy half the number of these wretched acres in Kerry which they had of good land elsewhere, and compounding both into one Clayme, to cut off the Kerry acres for their Thirds.

13. On the other hand, in Connought 3 acres were given out for 2, not onely as a weakning to the stock of reprisall, but as defrauding the King of ⅓ per cent. of his whole Quitrent in that Province.

14. The two and 3 Courts of Claymes employed to make the settlements above mentioned, were an expence of neer 200 thousand pound to the nation; vizt: neer 100^{m}£ to the Commissioners and their officers, and the rest to Councill, Attorneys, Witnesses &c. Besides the expence of 4 or 5 years attendance of the most effective men of the nation upon those courts, and besides the expence of all suits concerning matters left to Law by them.

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[1] A prominent officer during the Rebellion and afterwards Scout-master-General of the forces in Ireland (d. 1685).

[2] *I.e.*, the column which showed the *gross* acreage, as distinct from the 'profitable' land capable of cultivation.

15. By this settlement, neither the Adventurer or Soldier, to whom the King promised confirmation at Breda, are satisfied; the 49 Trustees did for 7 years eat up the whole provision made for that Party. [There was] No Inspection of the Frauds and Injustice amongst the *Transplantees* and *Connought Purchasers*. 300^{m}£ in mony [was] odly disposed of. The *mero motu* men, other than those who came in by Innocence, wholy neglected; and the *Ensigne* men much more. The *nominees*, for whom the retrenchments were thought to have been an ample provision, scarce half satisfied. In Connought and Clare 3 acres were given for 2. In Kerry one imposed for 6. In Connought the King lost $\frac{1}{3}$ of his Quitrents. In Kerry, by exacting six times more then his due, the King got scarce $\frac{1}{6}$ of what was his due. The Private Grants, not grounded upon publiq service, but upon private favour, and the Interest for the most part of one Party, took away 500 thousand acres of the best Land. All the obnoxious Persons sheltered under the Imaginary merrit and pretences of a few others; and all this transacted with a trouble, expence, perjurys, forgerys, absurditys and contradictions aforementioned.

Postscript

Now it may be inquired who caused and procured the said enormitys? Whereunto it may be redily answered: Those who gott enormous proffit by the same.[1] Wherefore it ought to bee enquired as followeth:

1. Who brought in the 49 officers to bee satisfied wholy excluding the Soldiers? and who had greatest pretence to 49 arrears?

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[1] The names of the persons who made the greatest gains by the Acts of Settlement and Explanation are given by Petty in the unfinished Treatise referred to above (p. 47). They are the Duke of York, Duke of Ormond, Earl of Clarendon, Earl of Anglesey, and Lord Kingston.

2. Whose Chaplins and Creatures were the Bishopps, whose revenues were augmented?

3. For whose sake were the Articles of 1648 respited for no miscarriage?

4. Who had 300 thousand pound raised as years value and supplement?

5. Who in particular had the many vast forfietures which should have been applyed to the publiq?

6. Who put in the 49 trustees?

7. Who named the *nominees*?

8. Whose servants, friends, and Creatures, were the privat Grantees?

9. Who had the generall Power and Government, whilst these things were transacting?

10. Who were the Privy Councellors that transmitted these Acts, and what have they gotten by the same?

11. What hath some one man gotten out of Ireland by and since his Majesty's restoration? and to how many unrestored estates is the said gayne equivalent?

12. By the last clause of the Act of Settlement the Lord Lieutenant and Councill had power to alter all provisoes.

Memorandum. That the Duke of Ormond to keep himself unconcerned in these matters, got his lands restored, Anno 1660 by an Act of Parliament in England, and also his Pardon, and soon after his Regalities in Tipperary were set up. Hee onely endeavoured to have gotten some lands in Desmond as holding of his ancient manors, but quitted the same.

(*Endorsed.* "An other Narrative of the Settlement and Sale of Ireland.")

No. 19

The Ship of Ireland between Scilla and Charybdis

Scilla

That the Clergy, Lords, Commons, Privy Councell, Benches, Army, Sheriffs, and Justices of Peace, and Corporations, and Managers of Revenue, should be all Roman Catholiques.

That [they] should be enabled to make termes with any successor, have the protection of France, and able with them to invade and conquer England and bring in Popery into all the 3 Kingdoms.

Charybdis

To have 100 of the cheife hangd.
1000 sold to Algier.
5000 sent to America.
10,000 exchangd for French Protestants.
150^{m} families transplanted into Great Brittaine.
No papists allowd. No trust nor preferment.
2½ millions of Lands taken away.
Their names, Language, Genealogyes, Customs, quite abolished.

(*Endorsed.* "Scilla and Charybdis 1686.")

No. 20A

Advertisement

There are practicable meanes either to make the present Inhabitants of Ireland a Free State tributary to England, or the Refractoryes of that country to bee absolute villeins. And either with great advantage to the Crowne of England.

And to furnish Ireland with a sufficiency of the best mony and Coynes of Europe, to bring downe usury from 10 to 5 per cent., and to give it creditt all the world over, wherewith to drive the utmost trade, whereof that People are capable.

(*Endorsed.* "Advertisements concerning Ireland 1686.")

No. 20B

The State of the Case between England and Ireland (?1686)

1. The English have been in Ireland above 500 years; have spent —— millions & ——[1] men's lives in affixing Ireland to the Crowne of England, without any returne for the same till within the 10 yeares last past.
2. The Inhabitants of Ireland before the yeare 1170, think themselves to have been much wronged by the English who came into Ireland between the said yeare & the alteration of religion in Henry the 8th's time.
3. The English of the Pale &c. being Catholiques, and the old Irish, think themselves wronged by the English who came over between Henry the 8th & King James his reigne.
4. All the 3 species abovementioned think themselves wronged by those who made the totall conquest between the yeares 1649 & 1653.
5. There are many disputes concerning the King of England's & the Pope's right to the Dominium & Empire of Ireland.
6. The Inhabitants of Ireland are about 1260^{m} soules, & the numbers of English Acres in that Island are about 17 millions; which gives about 14 such acres to every head.

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[1] These figures are supplied in the succeeding paper, viz., 5 millions and 140,000 lives.

7. About $\frac{1}{6}$ of the said Inhabitants are British non-papists.

8. The Kings revenues are Anno 1686 about 300^{m}£ per annum, & in England about 1800^{m}£.

9. There are questions where, & in whom, the soveraigne power of Ireland doth lye.

10. The charge of the army in Ireland for these 30 yeares, *communibus annis*, hath been about 170^{m}£ per annum, or $\frac{1}{10}$ of the rent of all the lands & houses in that Kingdome.

11. There are not 20^{m} houses in Ireland that have 2 or more chymneys in each of them.

12. There are above 100^{m} houses in Ireland which are not worth 10*sh.* each, one with another; whereof the dwellers have no pretence to Land; whose stocks in cattle are not worth —— one with another; who live upon milke, potatoes & weeds, and in which no English is spoaken—All Catholiques.

13. There are above 120^{m} familyes in England whose harthes were returned as Insolvent, whose houses & gardens are neverthelesse worth above 5£ one with another—All Protestants.

14. The wages of labourers in England is 8*d.* per diem, in Ireland but 4*d.*

15. The Catholiques of England to the Non Papists there are as about one to 280, but in Ireland the Catholique Irish are to the rest as about 6 to one.

16. The number of Soules dwelling in the said English & Irish poore families are between 5 & 6.

17. The church Livings of Ireland of all sorts are worth about 90^{m} pounds sterling per annum, & the number of parishes are about 2200 & in England about 9600.

18. The acres of England & Wales are double to those in Ireland & the people about quintuple.

19. Usury in Ireland is 10 per cent., in England by 6, & Exchange between London & Dublin about 7 per cent., one time with another.

20. There is not coyned mony, nor gold & silver

specie, enough in Ireland to drive the Trade of that nation, nor to pay King & Landlords rents, much lesse extraordinarys.

Upon these 20 assertions wee forme this proposall for remedy of all or many of the old & present evills of Ireland:

That 100^m of the poorest familyes of Ireland bee transplanted into England, & That *vice versa* 100^m of the poorest familyes of England may be brought into Ireland. The charge whereof will bee about one million & the time for effecting the same about 5 yeares; but with great profit to the King & both Nations, & to the Transplantees.

(*Endorsed.* "About the Transplantation of about 100^m families between England & Ireland.")

No. 21

OF RECONCILING THE ENGLISH AND IRISH AND REFORMING BOTH NATIONS. 1686

Whereas in the Kingdome of Ireland, By reason of difference of extraction, Language, Religion and Manners amongst the severall Inhabitants there, such hatreds and animositys have arisen as have caws'd and occasioned the following evills to themselves and to the Kingdome of England, vizt:

1. The Losse of about 140 thousand Englishmen's lives, and at least as many more of Irishmen's, since the year 1170 (being about 516 years since the English went into that country), with the expence of 5 millions of English Treasure, with all the calamitys of war, which have befalen both nations.

2. The encrease of people hath been so slow, as that the said country is scarce one third part so well peopled as England now is, nor as it can beare.

3. That the Crowne of England for the said 516 years (till within these last 10 years) hath scarce had any proffit or revenue above what hath been spent upon the place.

4. That so great an Army is kept in pay to keep the Peace there, as requires the $\frac{1}{7}$ part of the rent of the whole land.

5. That the Irish, upon Account of Religion and Revenge of wrongs, seem forced to make such friendships and corrispondence with forain nations, as makes them useless (if not dangerous to the King of England) in any war which he may have with those nations.

6. That the Irish, upon Account of being made a Prey to the English, live without any Considerable Labour and Art, and live in so wretched Houses, as (besides about 20^{m} which may have 2 or more chimneys in each of them) are not worth 20*s*. one with an other, and are not fit for making merchantable Butter and Cheese, Linnen or white wollen yarne.

7. That the same Lands, which are worth 8*s*. per annum rent in Ireland, are worth 14*s*. in England; and what is worth 12 years purchase in Ireland, is worth above 18 in England, and consequently the lands which is worth 5*l*. in Ireland is worth 21*l*. (or above quadruple) in England.[1]

For remedy whereof, it is proposed as followeth, vizt:

(1) That (whereas there are 7 millions of people and 1100^{m} houses in England, and at least 1250^{m} people and 240^{m} Houses in Ireland) there may an exchange and transplantation bee made of part of the said people; vizt: that 100^{m} Irish Families[2] (of such as are Catholeques and speak least English, and have also least of trade and skill in manufacture) bee carryed into England, and equally disposed of, as that there may bee one such Family to 11 English Familys.

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[1] This seems to be a miscalculation; the figure for England should be £13.

[2] At 5 persons to a family, or 500,000 persons.

And that withall 40^{m} unmaried women of above 15 and under 30 years old, bee also brought by 10^{m} per annum out of Ireland, and bee equally dispos'd amongst the 7 millions of Inhabitants of England (which will be about 3 per cent. or 4 to 70. And lastly that 10^{m} youth, aged between 15 and 20 years old, may bee brought out of Ireland, and placd with most advantage in England, for their learning of Trades and Manufactures.

2. It is also proposed that 100^{m}, of the 140^{m} insolvent Familys,[1] may bee brought out of England, and planted in 1000 Townes artificially contrivd, with whom 40 thousand Irish Familys who have English wives should bee mixt. Or else (there being left but 50^{m} familys) that 40^{m} women should bee brought out of England, to marry with Irish men, so as each familie may have English mothers or mistresses in it. And that 10^{m} young men bee also brought out of England, to bee soldiers there, so as the number exchanged may bee equall. Which exchange being made, there will bee in Ireland 550^{m} new English, 250^{m} old English (in all 800^{m} English), 350^{m} Irish and 100^{m} Scots, in all 1250^{m}. And there will bee in England 6 millions 450^{m} English and 550^{m} Irish, or about 10 for one (575,000 papists, 6425,000 protestants), and in Ireland neare 3 Brittish for one Irish. All this is to bee performed within 5 years at 1100^{m} pound charge.

3. In the mean time, it is propounded that $\frac{1}{10}$ of the Army in England bee Irish, $\frac{1}{10}$ of the Officers of the Revenue, and 500 Irish Priests.

4. And that in Ireland all officers of the Church, Justice and Army bee English borne men, as also all In-holders, victuallers, Postmasters, together with 500 English Priests.

5. That in England the Irish may bee Lawyers, Physicians, and Merchants, but not in Ireland.

6. That the Irish shall have Priviledges and Dig-

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[1] *I.e.*, of the 'hearths returned as insolvent,' referred to *supra*.

nitys in England, who sell their Estates in Ireland to the English and purchase lands in England.

7. That such of the unrestored Irish as the King pleases, shall have the equivalent of lands in America to the lands they lost in Ireland, as they were worth Anno 1653, or [an] equall number of acres.

Notes upon the above Proposall, vizt:

1. The Petition proposes the Exchange of 550^{m} people. Query, the expence, time, and other difficultys of so many removalls?

2. By what allurements or compulsion shall the same bee done? and whether within 5 years?

3. This being effected, there will bee in England 11 or 12 English and Non-Papists to one Irish and Papist; and in Ireland there will bee 800^{m} English (or 900 Brittish, reckoning 100^{m} Scots), 350^{m} Irish, in all 1250^{m} soules; vizt: 900^{m} non-papists to 350^{m} papists unarmed.

4. In this case Ireland, will bee most secure against the French and against 100^{m} Invaders of any Nation; the English will bee safe against the old revenges and Annimositys of the Irish, as also against loosing their Lands gayn'd from them; and thereby all emprovements will bee encouraged, so as to raise rents from 5 to 8 and the number of years purchase from 4 to 5, which is to double the price of the Lands.

5. The Housing of Ireland, as to their bignesse, quantity and scituation, and the manner of Towneships and Plantation, will be an emprovement (within 7 years) of 2 millions.

6. The Irish may bee safely trusted even in England as soldiers and otherwise, when 11 or 12 English are over one of them.

7. The Armys of both Kingdomes need not cost so much as now, by above 200^{m}£ per annum, and the nation's equally secur'd against forain attempts and domestic commotions.

8. There is now in England scarce one Catholiq for

above 200 others, whereas now there will bee one for 11 or 12. Which is a greater propagation and advance of the Roman Religion than the King can expect any other way, since in the first 12 months of his Rayne, there have not 12 proselytes appeared.

9. By that way, there will bee no feare of the Scots in Ireland, as many times of late.

10. When this is settled, the two Kingdomes may with ease and safety bee united.

11. There will bee reall liberty of conscience in both Kingdomes, when all Parties will have full means to understand each others' Religion and pretences.

12. Whereas the King hath in England and Ireland above 8 millions of subjects, whereof one are papists and enraged Irish, By this mixture the whole number will bee all usefull; whereas now the 8 millions are but equivalent to 6, vizt: to 7 less by 1.

13. This transplantation will prepare the way for the designe of multiplying mankind, and the full peopling both Kingdomes in a short time.

14. The charge may bee 1100^{m}£; the benefit in 7 years will be decuple, or 11 millions.

15. The King's being a Roman Catholiq is almost necessary to this good work; the benefit whereof, will weigh down all the Inconveniencys of his Majesty's heterodoxy from the people.

16. N.B. that the 100^{m} Irish Familys shall go into the Houses in England which the English have quitted, and that the English shall have new dwellings in Ireland, according to designe of reforming dwellings there.

No. 22

A Proposal how the English may Buy Out the Interest of the Irish Papists in Ireland and Advance the Roman Catholique Interest in England

Suppose all the Lands of Ireland which in this yeare 1686 do belong to Roman Catholiques bee worth 2 millions 400 thousand pound.

It is propounded to give them for the same (at the rate of 20 years purchase), lands in England to the value of 120 thousand pound per annum, and in lieu thereof, to carry into Ireland 120 thousand poor English Familys, to bee settled in Ireland according to the new modell of Plantation.

It will hence follow, that all Controvercys concerning the title of Land in Ireland, between English and Irish, Protestant and Papist, will bee quite taken away. That the number of English will be encreasd by neer 1000^{m} heads. That the manner of Dwellings will bee made better, not onely then the Irish, but then the present English; and that Ireland will export Commoditys enough, not onely to pay the said 120 thousand pound per annum Rent in England, and such other Rents are already due out of Ireland to the Inhabitants of England, but also to buy and bring in such foraine Commoditys as Ireland wanteth, So as the proposall is fully practicable.

No. 23

A Probleme (1687)

For making a Naturall Fundamentall and perpetuall emprovement [and] settlement, and Union of England with Ireland.

1. By carrying 1 million of the 1300 thousand people

now in Ireland into England & adding them to the 7 millions already there.

2. By leaveing onely 300 thousand Heards-men and Deary-Women in Ireland to manage 6 Millions of great Cattle there, or the equivalent in other species; quitting all other trade besides the same.

By which alteration

1. There will arrise a benefit to the King of above 5 millions of pound sterling.

2. And to the Comunity of the people in both Nations a profit of above 90 millions more.

3. Besides the ordinary & extraordinary charges incident to this undertaking, the compensation of all damages & the gratifications of all persons who shall bee instrumentall in this worke, estimated at 5 millions more.

The questions necessary for answering this Probleme are.[1]

1. What the value of all the Lands in Ireland are in this present yeare 1687.

2. The value of the Houses which have more then two Harths in each.

3. The value of the Goods which cannot bee removed into England & which are not necessary to the Intended Cattle Trade.

4. The value of people in Ireland at a medium per head.

5. The number of English pasturable Acres in Ireland, with the number and value of the Cattle which the same will feed.

6. The ordinary expence of the people of Ireland, and also of those in England.

7. The Charge of transporting people, from the middle of Ireland to the middle of England, at a medium.

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[1] The answers to these questions will be found in the *Treatise of Ireland*, chapter ii (Hull, 558-560).

8. Of a thousand head of Cattle, what part are Milch Cowes, and what is the yearly ordinary produce of such a Cowe?

9. Of a thousand head of Cattle what proportion may bee slaughterd every yeare, and what the value of such slaughterd Cattle may probably bee?

10. What part of such produce must bee spent in Ireland, and in what part exported, and where the effects thereof shall at last rest?

11. Supposing 300 thousand Heards-men & Deary-women, aged between 16 & 60 years old, bee sufficient to manage the said Cattle trade; what will their yearly wages bee?

12. What number of Divines are necessary for the said 300 thousand soules, and what will bee a competent maintenance for them?

13. What is the present value of apropriate tythe and of the Church Lands in Ireland?

14. What may bee the Charge of the Civill Government of Ireland under the posiety[1] and semplisity of the people above mentioned?

15. Whether 4 thousand men at sea, 2 thousand Horse, & 15 thousand (of the 100 & 50 thousand Heards-men) serving by turnes on foot, will not bee a proper and sufficient Guarde for Ireland, in this Condition?

16. In how many yeares may the aforementiond transplantation bee effected?

17. By what rules shall the advantages arriseing from this change bee aportioned & distributed, and damages bee compensated?

18. How much of this worke, may be performed without any new Lawes or strayning the old ones?

19. What hath the Crown of England gaynd & lost in blood & Treasure for the 5 hundred & 16 yeares it hath had to doe with Ireland, and what revenue hath the King had out of it?

20. What proportion in value doth England bear to

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[1] *Sic*, but perhaps 'paucity' is intended.

Ireland at a medium of the last 7 yeares, and what will bee the value of Ireland after the Change here propounded?

21. In what particulars will this proposall bee morally, legally or naturally Impracticable? What will bee the dificultys & damages, that the abovementioned 5 millions of mony will not answer, and what are the Colaterall evills which 95 millions will not ballance?

22. Whether by gayning 95 millions bee understood the gayning of the sume by one party or faction of men from an other, or by the Comunity of the whole people from the Earth, sea & foraine Nations?

23. In what number of yeares, if but 3 quarters of the teeming women were married, might the present people of England encrease to 12 millions, those of Ireland to 4 & a half, and those of the rest of the King's European Dominions to 3 & a half; in all 20 Millions?

24. Whether it bee the King of England's Interest to acquire more Teritory then hee now hath, or rather to bee effectuall soveraine of a reall Mare Clausum, attaineable onely to himself?

No. 24

The Case & Condition of the Protestants in Ireland anno 1687

The English invaded Ireland Anno 1170 & in length of time conquer'd the Land now calld The Pale, being all of the same religion.

About 1540 There was a change of religion made by Authority—casting (?) of the Pope, disusing the Masse, prayer to & for the dead &c.

Soon after, upon the severall rebellions of Desmond in the West & the O'Neeles in the north of Ireland, The English got great quantityes of Land without the Pale.

Before the Change of religion (in Hen. VIII's time) the lawes of England were made of force in Ireland, subordinating it to the Lawes of England, wherein Ireland should be especially named.[1]

The putting Mary Queen of Scots to death, The succession of her son King James, The Spanish match & the actuall marriage of Mary of France, with the taking of Rochelle,[2] did beget great feares in England of the returne of Papacy thither, & of the enlarging [of] monarchy & prerogative there, which Anno 1641 appeared in a war of the 2 houses of Parliament against the King.

In England The greater part of the People were for the Parliament, & in Ireland The greater part of the English were also such. But of the Catholiques in Ireland a few were for the King; the Bulk were for themselves, seeking what they obtayned in their peace of 1648; & a great part of these latter were for the Pope & Independancy from England, & [were] governed by the Clergy &c.

The Parliament of England got a law not to bee dissolved but by themselves, and another law for suppressing the rebellion in Ireland (breaking out 23 October 1641) for comitting the management of the same to the Lords & Comons of that perpetuated parliament. Nor would the King reserve to himselfe the power of pardoning otherwise inherent in his prerogative & Crown.

This parliament actually suppressed this rebellion about the yeare 1652, made rules grounded upon the acts of 17 & 18 Carol. prim. for satisfying the monys raised for that end, and for paying the soldiers who had finished that worke, for granting mercy to the Irish, & for punishing such as had been authors & obstinat promoters of the rebellion; appointing

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[1] By 'Poynings Law' (1494) which made the Irish Parliament dependent on the English executive.

[2] Henrietta Maria married Charles I in 1625. Rochelle was captured from the Huguenots by Louis XIII in 1627.

Courts for tryall of all qualifications, and afterwards measuring the Lands & stating every particular's debt, set out the forfeited lands accordingly. All which was confirmed by a remnant of the same parliament, according to the possessors upon the 7 May 1659.

The persons thus satisfyd & confirmed, whilst they had armes in their hands (& when the King lay in exile [and] had none), surrender all their conquests & acquisitions to the King, tell him what they had restored to the Irish &c. Who in Aprill 1660 confirmes every man in his said possession as upon the 7th May 1659. The same persons assembled by the King's authority into a parliament give the King one year's value, & make it up 300^{m} (the full value of all the forfeitures 1653) to bestow upon those hee thought had best deservd of him in these matters. And afterwards their quit rents from 3 to 5 to the value of 300^{m} more; grant him in Pole-moneys & subsidies 600^{m}£ more, & besides all [this] establish him a revenue quadruple to what hee had before the wars or the yeare 1641.

The Act of Oblivion (passed in England 1661) reserves the disposall of forfeitures to themselves, tacitly allows of disposesions made by any authority from the Long parliament & all other parliamentary conventions.

But a certaine declaration was procured from the King (date 30 November 1660) admitting many persons to bee restored to their estates *ex mero motu*, others because they had been soldiers to foraine Princes in whose countryes the King had lived, and others to bee restored because their lands hapned not to have been actually allotted & set out. And withall appoints a New Court for tryall of Innocence, after the unlimited tryalls upon former acts of Settlement, by which $\frac{1}{6}$ part of all the lands which ever belonged to Catholiques were restored unto them; speciall Judges appointed by the King & approved by the Irish for that purpose, whereby strangers to proceedings in the time of the rebellions were put (at their owne cost) to find out the secret betrayals of the Irish 20 yeares before, & to contest with a multitude of perjuries & forgeries used for their defence. By this Court were restored to the Irish as Innocents 1200 thousand acres of land Anno 1663, then worth 4 times as much as the whole was worth Anno 1653, by reason of the depletion & Calamityes caused by the said Rebellion.

After this another act calld the *Act of Explanation* restores 54 as nominees without tryall, and 300^{m} acres of Land by speciall grace & proviso, & retrenches $\frac{1}{3}$ of all that was possest 7 May 1659 & confirmed by the King at Breda, & takes away the benefit of being reprised in equall worth & purchase.

Three yeares were spent in the Execution of this Act, which left many things to Law, to be determined in severall proper Courts, & severall new commissions for reducing quit rents, settling conaught, & remedy of defective Titles Anno 1684. All which lost His Majesty's protestant subjects 300^{m} more, or the full value of all the forfeitures as Anno 1653. So as they have in all purchased their severall & respective holdings 6 times over, according to their values in the said yeare 1653, as they might have been then sold in a free and open market.

* * * *

Now so it is that after 34 yeares trouble & turmoile, when men beleived estates in Ireland had been absolutely settled, & when they were bought & sold, & given in marriages & for security of loans for such, That about the yeare 1686,

(1) Only such men are appointed sheriffs as were not Innocent of the rebellion & did beare the visible signalls thereof.

(2) That the said sheriffs appointed & Impanelled onely such persons for juryes as were of the same qualifications.

(3) That thereupon all deeds which had been formerly deemed as forged & vicious, were set up againe & allowd by the said juryes & by Judges of the same sort, & all witnesses against them frightened & discouraged.

(4) Possessions were forced upon pretence of Injustice, which really were not or could not bee, or whose value was long before exposed.

(5) A new artifice was used to take away the benefit of writs of error into England, upon a generall pretence of being debtor to the King for harthes &c.

(6) The English evicted (?) most falsely or for having spoken ill of the government & the King's religion.

(7) Forged acquittances for rent frequently allowed against particulars.

(8) Protestants greviously punished for what they have legally done upon distressing for rent.

(9) Such appraisers admitted as have greatly abused the priests.

(10) Lease parcells (?) allowed upon very false & frivolous pretences against Protestants.

In briefe The Catholiques (who tho they were 10 for one to the Protestants in number, yet were not Equall in weight) are now, by their having all civill, Military, & Ecclesiasticall powers put or coming into their hands, as 100 for one in effect to the Protestants, who are thereby wholly extinguished and made insignificant, not onely in their numbers, but in the severall particulars following, vizt:

1. In their Lands, upon the 10 particulars aforementioned.

2. In their Trade, as merchants forain & domestic, by the Priests forbidding Catholiques to trade with them, & the Patent offices for life taken away without miscarriage. Their being impartially dealt at the Custome house.

3. The English artisans are driven away, by the Irish their contempt of anything which is curious, as by their spightfull fetching in the same from foraine parts.

4. English men canot recover their debts from Irish & Catholiques, because they cannot get Judgment on their bonds, much lesse execution upon their Judgements.

5. The Corporations, & even that of Dublin, are so governed by exasperated & revengefull Catholiques, that the Protestants are in daily feere of being abused, & near murdered, by the vast propritis of such who are lately come to live in the said Corporations, and are affronted in all places of publiq Meeting.

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Wherefore It is prayed That the Soverainty of Ireland may bee declared to bee in England, & That English borne men onely may have the guard & government of Ireland, as before the difference of religion. That the English may not live in daily feare of being Massacred by the Irish, nor deliverd up to the power of powerfull forain neighbors, of which there bee many formidable symptomes.

Besides that, the value of Ireland & all that is in it in this Yeare 1687, is scarce half what the same was 1684. And there is not many (how Irregular & imperfect soever), to drive the present Trade of the Nation into what the same is naturally capable of.

(*Endorsed.* " A Petition about the Sherifs & Juries of Ireland.")

IV

IRISH LAND REGISTRY

(25) The Registry of Lands, Commodities, and Inhabitants (1660-61)—(26) Of the Villare—(27) Statistics for a Registry—(28) Heads of Irish Revenue—(29) A Commission for the Survey of the Lands, People, Trade & Revenues, in Ireland—(30) A Coloquium between A. B. C. concerning a New Instrument of Government.

IRISH LAND REGISTRY

THE principle of Land Registration, with the double object of making transfer deeds more easily accessible and of simplifying titles, has been much discussed in modern times. It was not new in Petty's day, but it is only recently (1875) that a Land Registry has been actually set up for England and Wales, and more recently still that the element of compulsion has been introduced into its proceedings. In the opinion of many the efficacy of this Registry will leave much to be desired until compulsion to register titles is made universal.

Petty, as the papers of this section show, advocated a compulsory Land Registry of an all-embracing character more than two hundred and fifty years ago. It was to be on the model of similar institutions already existing in Holland, but was to deal, besides land, with property of all kinds as well as with persons. It was also to form the basis for the collection of Revenue and to provide the statistics necessary for the due allocation of Poll Money, Land Taxes, Customs, Excise, Licence duties, etc., amongst the population. His thoughts must have been working on these lines when he wrote his *Villare Anglicanum*, which Aubrey describes (*infra*, No. 49) as " an account of all the Cities, Towns, Villages, Great Houses, Roads, Carriages, Principal Inns and families of England." The *Villare Anglicanum* is, however, not extant, and Petty was probably deterred from proceeding further at home by the hostility of the legal profession, which appears to have been as much opposed in his time as it has been since, to any such suggestion (Hull, *Political Arithmetic*, 264). He may have been thus led to propose that the experiment should be made upon the *corpus vile* of Ireland.

No. 25 is a plan for an Irish Registry of Lands, Commodities, and Inhabitants. It was written in 1661 and is evidently the *Discourse about a Registry* given in Petty's own list of his " Works & Writings " under that date (No. 158 *infra*). The undated notes in No. 26 must have been made in contemplation of this project, but it seems to have subsequently lain dormant in Petty's mind for more than twenty years.

The papers which follow were probably all written about 1682. In June of that year Petty was summoned from Ireland to London by the Commissioners of the Treasury in connection with his lifelong dispute with the 'Farmers' of the Irish Revenue (*Corr.*, 10th June 1682). He appears to have profited by this opportunity to put forward his own suggestions for the reorganization of the fiscal relations between the two countries, in a plan which involved the abolition of the 'Farm' and the appointment of himself as Surveyor General for Ireland. The prospect at one moment was encouraging. Amongst the MSS. there is a document, dated 24th May 1683, and signed by the Lord Privy Seal (Halifax), the Lord Lieutenant (Ormonde), and the Lord Treasurer (Rochester), which certifies that the King had promised Petty one-fifth of any additional revenue accruing to the Irish exchequer as a result of his advice. His schemes were, however, set at naught by the triumph of his old rival Sir James Shaen who, upon a promise of securing a largely increased income to the sovereign, secured a new lease of the existing 'Farm.'

No. 27, *Of a Registry*, is somewhat confused in form. It starts with a suggestion for the establishment of an office in Dublin, and the division of the whole country into 12,000 'precincts,' each with its 'Council of Revenue.' It goes on to detail the machinery by which the taxes should be levied, dealing specially with the method of collecting the Customs and with the classification of the population.

No. 28 is complementary to No. 27 and gives estimates of the sums which might be raised by a tax on Persons, Rents, Pasture Land and Cattle, Corn and Personal Estates, ending with an abstract of the total Revenue on this basis.

No. 29 is a draft deed in Petty's hand for the appointment of a 'Surveyor General of the Lands, People, Trade and Revenue of Ireland,' an office which Petty himself was evidently prepared to fill. His salary was to be by way of a commission of one-fifth of the increase of revenue which he might secure for the crown.

In No. 30 the whole matter is reviewed in the form of a *Colloquy concerning a new Instrument of Government between A B and C*, in which Petty meets some of the objections which had been raised against his proposal, and seeks to show its advantages.

A Surveyor and Registrar General for Ireland was for the first time appointed in 1841, and the Revenue statistics which Petty postulated have become available by degrees through the activities of the State; his Irish Land Registry however has not yet materialized.

No. 25

THE REGISTRY OF LANDS, COMMODITIES, AND INHABITANTS (1660-61)

It is humblely prepounded, how by due use and approuvment of the severall Surveyes and other Inquisitions which hath bin made within the 7 last yeares in Ireland, with some few others yett to bee made, and by certen Registryes to bee sett upp with reference unto them, the ensuing Benefitte may bee orderd, vizt:

1. How not only the naturall & intrinsick, but also the casuall and circumstantiall vallues of Lande in Ireland, may bee ascertayned and brought under Rules; not only as to the fee simple thereof, but also as to any other smaller estates in the same whatsoever.
2. How the bounds and meeres of them (a matter of much moment in Ireland) may bee perpetually preserved, under all the wasting (?) and neglecte possible.
3. How the tytles to the same Land may bee kept allwayes cleare and made evident to bee such; and that As well elsewhere as in Ireland.
4. How the Writings and Deeds concerning the same may bee lesse tedious, confused, intricate, numerous, and changeable.
5. How a due Account of the improovements and Inhabitants of the said Land may bee taken and kept; As also of the said Inhabitants their Condition Trade &c.

From whence it will follow:

1. That to buy and sell lands in Ireland will bee a

busines of no Craft, But that Ignorant and absent persons may safely doe the same; Or that they may take it in security for Comodityes.

2. That by the aforementioned ascertaining of the vallues, tytles, and Conveniency of such land, the same will become as money; and that all greater payments may bee conveniently made with it, without disturbance or confusion.

3. That the said lands shall not only become as money, but as a Bank of money, which is farr more safe and comodious than coynes.

4. That Assessments and publique levies will bee taxed and made in their just proportions.

5. That about halfe the law suites in Ireland will bee granted, and the Charge of examining and secureing tytles by deed and wrightinge lessened.

6. That trade will increase and grow as fresh as plenty of money & method can Advance it.

7. The Impediments as well of Forraigne Commerce as of Domestick plantation and manufacture, will appeare where and how they [are], both as to persons and things, in every part of the Nation.

8. English and Forraigners will bee more easily invited and incourraged to plant Ireland, When with small trouble and much certainty they may purchase [land] in Ireland before they remove from their owne.

9. The King shall att all tymes know whether his People (that is the Naturall and true riches of his Kingdome) multiply or diminish, grow richer or poorer; both in respect to one another or to forraigne parte.

10. The King shall know whether the English interest strengthen or decay there, As also how the severall Sorte and fashions wax or wane, and ballance each other att all tymes.

11. By meanes of the premisses, sumptuary Lawes may bee brought into Ireland to restraine exorbitant expense, corporations may bee rightly applyed and not abused, and liberty of Conscience (if any such thing

must bee allowed in some one of his Majestys three kingdomes,) may bee made safe and profittable, and a fitt meanes to prevent the future rebellion of the Irish Nation.

12. That the land of Ireland (the expedients aforesaid proveing reall and practicable,) will be worth above one third more then now they are, and that within two yeares tyme; how much sooner the more worth thereof happen to bee advanced by vertue of other Causes.

An Explication of the Proposalls concerning the Registry in Ireland

Surveys, Inquisitions and other Accounts which have bin taken within these seaven yeares [1] in Ireland:

1. A Survey in 1653,[1] of all the land in Ireland, their Content by estimate [of] vallues, Improvements, titles and Incumbrances given in by the Country.

2. Another of the same Nature, supposed not only more exact but also more universall and Authentique, being taken by speciall Comissioners and a Jury of the Country Anno 1654.

3. A Geometricall Survey, taken by William Petty Anno 1655, of all the land then looked upon as forfeited, together with the Crowne and Church lands, as also the Barrony Landes. In which Survey [was] discribed by a scale of 40 perches to an Inch the quantity, figure, and situation of all the Barroneys, parishes and towne or farme land, with the quality of each, the situation of townes, Castles, bridges, churches, loughs, boggs, mountains, rivers, highwayes &c.

4. Survey taken Annis 56 and 57, of all the howseing within all the walled towns of Ireland, with their demensions, materialls, chymnys, roomes, values; together with their gardens, easements, the present Condicion of repaire &c.

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[1] This allusion and the remarks which follow date the paper 1660-61.

5. A Survey of all tymber woods and number and quallity of the trees, distance from navigable waters, vallues &c.

6. The vallues of the severall lands before the warres, just after the ending of the warres, when lett by way of *custodium* for 1, 3, 5, or 7 yeares.

7. The proportion of the goodnes of all the lands each to other, in order to the Assessments grounded upon the surveyes, and the full debate of all partyes concerned Anno 56, 57, 58, & 59.

8. A rentrole of all the lands sett out to Adventurers & Soldiers, as lett by leases Anno 1659. As also of the lands and howses lett by the state for 21 and 31 yeares.

9. A Report of Speciall Commissioners from all parts of Ireland concerning the new dividing and uniting parrishes, with the reasons on all sides.

10. Geograpicall Mapps of almost the whole Nation, in variety of Methods and Contrivances, Respecting other and more Endes than those for which the Survey was at first made.

11. The way of dividing the whole Nation into precincts Annis 52, 53, 54 &c, with the times [? lines] of Exclusion and Communication &c.

12. Some old Surveyes of Ireland taken in Henry 8th's, Queene Elizabeth's, and King Jameses tyme, Lord Strafford's tyme &c.

13. The Account of Proceedings upon defective tytles. The claymes of Protestants upon Irish Papists estates.

14. Debentures stated for service before and since 1649; for service in England. How much of Each was sattisfied? Anno 1653, 55, 56, and afterwards; and in what proportions?

How many Debentures exhibitted were never sattisfied? How many are probably lost? How many loose Debentures? Who were sattisfied by lott, who by Appointment?

15. What gifts and beneficiall Leases [were granted]?

16. What is the debt of the Adventurers? How

much thereof is upon the doubling ordinance? What the Creditt of the ten halfe counties is? What Louth? What Adventurers are actually deficient?

The Artiffices used by the Adventurers in Survey and Sattisfaction.

17. How much land is in all Ireland, proffitable & unproffitable? How much in the old plantations are protestante? How much in new tytles made since 1652? How much will remaine to Irish & papists? How much in each province of each sort?

18. How much hay in weight may grow? What [is the] increase of each graine? What [number] of each sort of Cattle may bee fedd upon and out of every acre of land in Ireland, reckoning the acres of each denomination one with an other? Also what rape, hempe, flax, woad, honey bee produced on each, for three years tyme upon a medium?

19. What fisherryes of each sort? What colleryes, mynes, quarryes, places fitt for salt, allum and copperas workes?

Of Bishopricks [and] Deanaries.

Tythes Propriate and Impropriate, Gleabes, mensall lands.[1]

Crowne, Hospitall & Schoole lands.

Parsonages, Viccaradges, Rectoryes, Advowsons.

Figures, quantities and Scituation of each Diocese, parish &c.

Circuits of Judges.

Roades, postages, ffayres, marketts, ports, harbours, streets, cittyes, Corporations &c.

Accompts of the Inhabitants

Who were Officers of the Army till 1643, 46, 53, 55, 59, 61?

Who were officers in Civill Affaires 41, 46, 52, 54,

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[1] Lands appropriated to the service of a bishop for the maintenance of his 'table.'

56, 60. (vizt:) Who were Ministers, Chaplins to the Army, Schoolemasters, on the severall occasions?

Who were Militiamen Anno 56. Addresse-makers on the severall occasions—Engagements about anno 53. Abjurers anno 58, Proved constant good affection, compounders, Justices of Peace, Common Committee men and Referees. Commissioners of assessment, Transplantable persons and who had Articles att severall tymes?

Who were transported into Spaine and Flanders?

Anabaptists, Independants, Scottish Presbiters, Quakers.

Accompts of other Miscellany Matters

The old Rents, new Quitt rents, Customes and Excise. Anno 1653, 54, &c., And when formed—Anno 1658 and since.

Severall reports, results, councells and practices concerning trade; raiseing and depressing Coynes; imploying the poore; makeing cloth; brewing strong Drinks, Inns and Alehouses, Pole moneys.

Manageing the Treasury by way of Exchequer and by private and generall Receyvers, men sent into England; Transplanting the Irish and Scots, sending men to the Barbadoes. Suppressing Toryes.

How the vallues of lands may bee knowne

1. By their Quantity, figure, scituation, (Article 3).[1]

2. By the intrinsick fertility. (Art. 18.)

3. By the Intrinsick and accidentall convenyences and improvements mixt (as Articles 1, 2, 6).

4. By the rents they have yeilded. (Art. 5, 7.)

5. By the Sales and purchases that have and shall bee made in each County and Barrony, from three yeares to three yeares, upon cleere tytles; All cast up by a Medium.

6. By the rents and other Conditions whereupon

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[1] These appear to be references to the various surveys enumerated *supra*.

Lands shal bee lett; by the holding or breaking of the tennants.

7. By the Interest Bonâ-fide, and really given for money, from tyme to tyme, whether above or below the Statute.

(Memorandum: That the tytles being cleere the vallues may bee knowne from the premises, otherwise not.)

The value of the fee or Inheritance being knowne, the Ensuing interest follow in proportion, either naturall, or reputative (vizt.):

1. Lease for 3, 7, 11, 15, 21, 31, 51, 99 yeares.
2. Lease for 1, 2, 3 or more lives.
3. Provisione after any of the said Leases.
4. Rentcharges of a quarter, one half, or $\frac{3}{4}$ of the reserved rent.
5. Abatements of the Improoved rents upon fynes or other Conditions, which are all to bee resolved into money per Agreement.
6. Rentcharges of the second quarter of the rent, after the first, and *sic deinceps*.
7. All other Adventurous bargaines to bee alwayes pay'd with Money.

N.B. Remainders are scarce Computable but by estimated proportions, *ex praemissis*.

8. Compounded Estates and Interests may bee knowne by Calculation, *ex praemissis*.

Of preserving Bounds and Meeres

1. By Perambulation in the presence of Persons concern'd at first.
2. By Comparing the same with the present Originall protractions and field bookes.
3. By running a Tying lyne from some permanent & conspicuous Marke, to some remarkable Angle or other marke in each Surround.
4. By performing the premisses with Magneticall Instruments, Compared with the true Merridian.

5. Upon All Sales of part-Surrounds, to cutt them in the presence of all contiguous proprietors, and send Coppyes of the platts to the Registryes.

6. By Septennial and triennial perambulations.

How titles may bee kept cleere, As well to fforraigners as others

1. Haveing cleared all claymes of nonforfeitors in forfeited estates and allowed of the purchases made of the said forfeited estates, There must bee a Distribution Booke confirmed by Act of parliament, without any kinde of Ambiguity, Expressing every mans Interest on a certaine Day.

2. By entring, in the respective Countyes, all bargaines Conveyances &c. made of the same ever afterwards.

3. Sending Abstracts of the said Deeds and Writings to the Barrony Registry.

4. And the like to the generall Registry att Dublin, where there are to bee Py-bookes,[1] Alphabetts, tables, Mapps &c.

5. A Registry to bee kept att London for the Land of all them that desire it, Corresponding with that of Dublin, And from thence forwards; and in tyme att Amsterdam and other places.

6. The Barrony Register is to bee a Surveyour who's worke must bee:

   1. To enter the Originalls of all smaller Conveyances and send the Abstract to the County and to Dublin.

   2. To Enter the Abstracts of the Register which were entered at Large in the Countyes.

   3. To perambulate, cutt & [mark] whole Surrounds; Judge of the Intrinsick fertillitys; take notice of Improvements.

   4. Other things hereafter to bee mentioned.

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[1] *Pye Books*, *i.e.*, alphabetical indexes to rolls and records.

Writings less tedious, Intricate and Changeable

Less tedious: For when A hath sold any estate to B and made him Deeds thereof Expressing All the Covenants and Conditions at length, when B shall sell the same to C there needs but few lynes to bee written thereupon. Secondly; Custome will make certaine words soe well understood in this office, that the long periphrasticall expressions wil bee needlesse.

Lesse intricate: Because there can bee no private underhand Conveyances heere, One nulling and defeateing tother, under assumed names.

Lesse Changeable: For tis likely many of the said deeds wil bee made where they bee entred, And Consequently multitude and constancy of Imployment will make the Conveyances perfect, And able to worke at cheap Rates.

How an Account may bee kept of Improovements

1. The Barrony Register who (as before was sayd) is to bee a sufficient Surveyor, having large-scale platts of all the land in his Charge, can most easily note downe upon them what howses is built, what dilappidated or pulled downe, of what cubicall content, of how many roomes and Chimneys, of what materialls, with what walls, Quicksett hedges, ditches, groves, Orchards &c. Estimating by how much the said land is the better in the oppinion of most men for such Improvements. And give an Account yearely thereof to the Register, attested by three other able men of the Barrony.

An Account of the Inhabitants, their Condition &c.

1. By receiving from the Minister of each of the parishes within his Barrony All the births, marriages and burialls; the number of marryed couples, single persons, male and female; if under 7, 14, 21 or 40 yeares old.

How many Ministers, Lawyers, Physicians, Merchants, husbandmen, handicraftsmen, Marrinners;

Papists, Protestants & others, Episcopall, Prisbiterians, Independents, Anabaptists, Quakers, & other Neuters; English borne, Irish, Scotch, Such as Can speake noe English.

2. Secondly hee is to receive from the said Minister, with the Constable or Churchwardens, what sheepe, howses, Oxen, swyne, goates, Each Inhabitant of his parish had on some certaine day. Also an Estimate of the severall graynes, butter, hydes, tallow, Rape, honey, Wax, wooll, Aples, hempe, flax, and other grand Comodityes, each of them raised that yeare.

Buying & selling of Land will be easy

1. The Tytle will bee knowne.

2. Quantity, figure, situation, howses, Improvements, distance from Church, Markett, Place of Assizes and Sessions, as also from Dublin, and other ports or Navigable Rivers.

3. What rents it hath yeilded on severall Occasions, and at present. What the contiguous lands have beene lett and sold for. What Assessment it hath paid. What Comoditys it hath Raysed. What Number and quantity of Inhabitants. What religionaryes prevaile. In what proportions men breed or dye, and Consequently how healthfull or pleasant; And withall whether tenants generally thrive or not, which will appeare by the holding their Leases and Improvements.

How many yeares purchase land generally yeilds thereabouts at that tyme; whether the whole Country have for any number of yeares growne richer or poorer.

And all this may bee knowne upon the publiq faith of sworne and knoweing men, and upon the Consent of all the people, by proportion and relation to other places, persons and things. I say, upon all this knowledge A man may take such lands in Security for ½ its worth, As the same appeares out of all the premisses.

Now lett any man Judge, what tyme is spent by an

Ignorant Man and a Stranger to Enquire out all these things. How often hee is Cheated. How many Journeys doth hee make to veiwe before hee buyes. How often confused in his Meeres, in his title, Conveyances &c.

Land thus regulated, will bee Equivalent to 4 Millions in point of trade

There bee about 10 millions of Irish acres of proffitable lands, worth one acre with another 2*s*. per Annum and 7 yeares purchase. Soe as the whole is worth 7 Millions. The which with the howsing of the Walled Townes (worth another Million) is worth in all eight millions. Whereof the ½ is 4, which I was to prove.

There being Registries in every Barony and County towne, All payment above 5£ may bee made in engagements upon lands; the people of each Barroney meeting once a weeke to make payment, as Merchants in London doe the Satterday mornings. Now Coynes will serve for small payments. This has all the conveniencyes of a Bank, (vizt:) will prevent false and light Coynes, the Knavery of Cashiers, danger of Burglary, raiseing and falling of specie, and Exchanges &c, and wil be more comodious and secure than any Banks.

1. Noe Prince can force it.
2. Noe others can Embeazell it.
3. The security is better than money, because tis on land which goes but at ½ vallue.
4. Three yeares tyme (in which new Appreceations must be made) will not depresse the vallues ½ in halfe, but may as well enhance them.

Assessments will bee made in equal proportion

For whether you Assess by the title and place, by the acre, by the smoak, By the personall estate, by the religion, by goods imported or exported, or spent, by the family and heads, by the manufactures made, Comodityes raised &c, I say that every way the

Assessment will not only easily bee made proportionable as to the people, but also wisely and politickly (as to the Prince). For if men bee ambitious of titles hee can poll accordingly. If apt to sects, hee can mulct, and yett tollerate. If expensive, he can excise. If exorbitant in houseing, then by the smoake. If Labourers grow rich and Lazey, then by head money.

Halfe the Lawsuits taken away

1. Noe suites about titles of land.
2. Noe tedious proveing of Deeds.
3. Little Controversy about moneys, because little Coyne will be used.
4. Ventureing to trust men upon their faibilious reputation will vanish.
5. Caterpillers about Courts of Justice will lessen.
6. Opportunities of cheating (which makes men neglect other wayes of helping themselves and benefitting the Publique) will by ceasing necessitate men to Labour.
7. Conveyances will bee plaine, few, and cheape, as aforesaid, and easy to bee understood without suits.

Forraigners will come over:

When men can know all the particulars concerning purchases mentioned in the foregoing pages, And that upon the publiq faith, and without charge and disappointments. They can easily Compare what they would have, with their owne Condition and what they have, and soe know what to chuse.

Whereas some men spend all they have in seeking in Ireland, but haveing spent themselves about it, returne home rayling att the Country and discourageing others. Now if unto this certaine Information of things were added the Conveniency of Innes at both watersides (whereof wee shall speake elsewhere), A man might come out of Midd England into Midd Ireland as from one home to another.

Trade & Manufacture must increase

If people increase, plantation must increase; If plantation doe, (that is if native Comodityes increase) either manifacture or exportation must increase likewise. Now if wee know how many people there are and the faculties of each, wee can tell how much Corne will make them bread and beare; how much wooll and skins, Clothes; what Cattell will afford them flesh, butter and cheese; how many men's Labour in netts & Boates will find them fish and fowle. By all which and by knowing how much of all these the Intrinsick vertue of the Country will produce, and with what Labour, wee know as followeth, vizt:

1. Whether wee can live.
2. What wee can spare and export.
3. How many of our whole number need actually to Labour.
4. Wee know by Compareing our hands to our Lands, whether vending our native Comodityes, as wooll and hydes, unwrought or manufacturing them first, be to our best advantage.
5. Wee knowing how many hatts, shooes, stockings, yards of Cloth will suffice us, know withall how many makers to imploy; soe as none may want worke, nor the Nation bee unprovided, nor their Marketts glutted or unfurnished.
6. Wee know how to supply our fforraigne Marketts soe as to keepe upp the price of our owne Comodityes, as for Example:

If our Land will beare more corne than wee can spend at home and send abroad, (both which wee shall know) Wee shall thereby tell how many hands to take of, and can tell that very other thing on which to imploy them.

7. Good accounts being kept at the Custome-house (as there will bee when there is noe more Custome stealeing,—that is when the customes are inconsiderable, the publiq levyes being made by way of Excize)

of all Imported wynes, sugars, Tobaccos, spices, druggs, dying stuffes, furrs, oyle &c, And the like of Cattell, beefe, hydes, tallow, butter, fish, Iron &c exported; wee can see whether wee gett or loose by ballancing one against t'other. And in case wee loose, wee know what Importations to prohibbitt (vizt: Laces, furrs, Wynes, silkes). Or else wee shall find the necessity to manufacture the Comodityes which before wee sent away unwrought, Soe as by their becoming of more vallue to ballance the said Importations.

8. Knowing the fertillity and Capacity of our Land, Wee can tell whether it hath not produced its utmost through the labours of the people. Wee can see whether plenty makes them lazey, and remeddy it. In briefe wee can find the best wayes & motives to make as many hands as possible to work, and that to the best Advantage. Wee can adjust the number of Merchants to our Manufacters, Maryners to the Merchants, Carpenters to the rate at which wee find Improouvement to bee made, Trades of Ornament to the proprietors of the said Superfluityes &c.

9. And finally when wee have a cleere view of all persons and things, with their powers & familyes, wee shall bee able to Methodize and regulate them to the best advantage of the publiq and of perticular persons.

No. 26

Of the Villare

1. See what denominations are geometrically surveyed—what imperfectly.

2. See the denominations in the Civill, Down, Grosse, Strafford's Survey, Claymes [book], Poll bookes, Harth bookes, Excise bookes.

3. Make the measured Denominations the standard, and interpret all the rest by being parts of them, or contayning them, or by an alias.

4. Take advice of the Justices at their sessions by order of the Government and take the English names or names in English, and see by what new names each present proprietor desires to have his lands henceforth called.

5. Print the Villare with longitude and latitude.

* * * *

1. Take in from all the last contractors or Managers their last bookes, and make the best good of them possible by parishes.

2. Take a perfect accompt of the people for 12 parishes, viz, 3 in each province; and thereby find out the whole number, with other observations thereupon.

3. Divide all the families into Tythings, of houses, of sexegonyes[1] of heads, with the names.

4. Cant to each Tything the license for beer and ale, wine, strong waters, excise of beer. (Tything man, scale keeper, Harthemaker, shore-wayter, Postmaster, Intelligencer, sheriffs, baily.)

5. Let 10 Tythings bee certified together, and the Tythings made extempore, that there may bee no complotting.

6. Let there bee articles and bonds printed &c.

No. 27

[Statistics for a Registry]

1. Let an Office of 3 Chief Commissioners bee kept at Dublin.

2. Let the best Harth Books bee calld in and all families Listed.

3. By the Lists and maps Let 1200 precincts bee made, of 200 families in each, to bee brought into 1200 Lists.

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[1] ? *Sexagenaries* or groups of sixty.

4. Let 12000 Petty-Constables bee made, (vizt: 10 in each of the said Precincts) who are to bee Licenced to keep taverns, Inns & Alehouses & there to sell strong waters, wines, Ale, Beere, Mum, Cider, Coffee &c. & all other Drinks and victualls.

5. Let there bee a Magistrate in each such precinct, (as Mayor, Bailiffe, Soveraine, Portreeve &c.) to bee chosen in the Common way.

6. Let there bee also a Justice of Peace resident in each precinct.

7. As also a Parson.

8. 2 head Constables & 2 Churchwardens.

9. Let the last 7 bee the Councill of the precinct for the Revenue, and the 10 others bee as instruments to them.

10. Let an Account bee extracted out of the Harth Books of all Malt Houses and Kills [Kilns].

11. Let the Parson and Church wardens give an Account of the People in their severall precincts; of their age, sexes, mariages, widdowhoods, Religion and Impotencyes.

12. Let the Magistrate & 2 Constables give an Account of every trade, office, title, Rent of his House per annum with its Garden & Orchard, of their Cattle reduced to Collops[1] & value.

13. Let the Parson, Magistrate, & Justice, take from each person dwelling in Houses of above one Hearth, his Owne Account (upon oath) of the personall Estate Hee possesses. Vizt: for Gold & Silver, not Jewells. Corne in Hutch & Haggard. Ships and Boats & Netts. Timber, boards & plank of all sorts. Wooll, Lead & Iron. In Silkes. Linnen, Cotten & Hemp. In Drapery new & Old. Leather & Skins of all sorts. In beef, tallow & fish. In tobacco & sugars. In Wines, Brandy, Usquebagh & Vinegar. In Coales, salt & Hops. In Drugs, Saltery and dying stuff. In Haberdashery, Upholstery & Sadlery. In

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[1] A *collop* was the 'grass of a cow,' generally computed at about one acre.

Iron-mongers ware & Nailes. In Grocery. In all other things by Estimat, as Saleable Houshold furniture.

14. Let the Licentients[1] give in an Account of the quantity of Malt in the precinct for the quarter ending at the usuall days, & of the beere, Ale & strong waters distilled and spent.

15. Let the Justice, Magistrate & Parson tax 10£ per annum upon the 10 Licentients, none under 10*s.* and none above 30*s.*

16. Let the King's Rent in each precinct bee noted as payable by each tennant, in behalf of himself & Landlord for the same.

17. So as there will bee Accounts of: Licences, Cabbanes, Other Houses, Personall Estates, Cattle & pasture, Corne in ground, Malt, Rents, People.

18. The Customes are to bee managed apart, vizt:

19. As to Customes, Let the Office keep Account:

> (i). Of the shippin going out, belonging to Ireland, the King's other Dominions, forainers.
>
> (ii). Of Passengers, by distinction of Peers, Baronets & Knights, Esquires, Gentlemen, Artizans, Others, Children under 10, Women; taking a fee for the same inwards and outwards—betweene 2 pence & 12 pence.
>
> (iii). Of woolls exported. Inwards of Tobacco, Salt, Sugar, Coales, Wine, Brandy, Iron.
>
> (iv). Let what the premisses want of 90^{m} pound,[2] bee made up by a poundage, of 4 pence in the pound of reall value outwards and 12*d.* forwards, upon the oaths of the Merchant, his Packer and Servant.

20. Let the Customes bee paid by the Merchant, Licences for Drink by the Seller, Cabbans the Dweller, Other Houses ½ by tennant ½ by Landlord, Malt by

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[1] *I.e.*, the Petty Constables who, *ut supra*, were to be licence holders.

[2] This was the total sum which Petty was setting out to raise (see summary in next paper).

the Maker & occupier, Corne in the Ground & arrable, the same, Personall Estate by the actuall Possessor, Poll mony, by the master of the family, King's Rents by the Patentee.

21. Let there bee 2 precinct-Lists, vizt:

One of persons shewing what every Man payes upon each head, with the totall of such particulars, that Precedency in the Precinct may be given accordingly.

The other List is to contayne as followeth: What is raised by: (1) Licences. (2) Cabbanes. (3) Other Houses. (4) Personall Estates. (5) Malt. (6) Corne and Arrable. (7) Cattle & pasture. (8) Rents. (9) Poll-mony.

Expressly mentioning: (1) The number of people. (2) Males & Females. (3) Maryed & Midwives. (4) Children under 10. (5) Aged above 70. (6) Between 10 & 70. (7) Males between 16 & 60. Females between 15 and 45. (8) Peers, Baronets & Knights. (9) Esquires, Gentlemen & Equivalent. (10) Artisans. (11) Husbandmen & Laborers.

And of Artisans:

1. How many taylors, Glovers & button makers.
2. Shoe & brogue makers.
3. Weavers of woollen.
4. Cotteners & tuckers.
5. Linnen & Cotten weavers.
6. Smiths & Latter men.
7. Plumers, Brasiers & founders.
8. Workmen in Silver & Gold.
9. Carpenters.
10. Joyners & turners.
11. Wheelewrights & millwrights.
12. Plough writes.
13. Sadlers & Upholsterers.
14. Bricklayers & Plasterers.
15. Painters, Grocers, Carvers & Printers.
16. Scriveners.
17. Fishermen & Mariners.

18. Sellers of Drapery, Mercery, Silks and Linnen.

* * * *

19. Of Grocery, Drugs, Dying Stuff, Saltery and pickles.

20. Of paper, books, leather, earthenware and Glasse.

21. Of Catholiques, Legall protestants and Dissenters.

22. Of Churchmen, Soldiers, Physicians, Lauyers & Civill officers.

23. The Corne and Meadow Lands to bee measured from the first of June.

24. The Cattle to bee reviewed in Aprill and October.

25. The people counted neer Christmas.

26. Accompt of House rent & Goods, neer Xmas.

27. Malt quarterly.

28. Customes once paid at Christmas.

29. Houses and precincts to bee numbred and markt.

30. Scales of severall Sorts (worth 5000£ ?)[1]:

Peeres £5 (?)

Barronets 18*s*. (?)

Knights 12*s*.

Esquires by Blood, Custome & Curtesy. 100£ freehold per annum. Patent Office. Doctor or Barister. Military Command (to a Captain). Magistracy. 8*s*.

Gentlemen by Blood, Custome, & Curtesy. Elector to Parliament. By Office Civill or Church, Graduat or Attorny. By Military Command. Whole-sale dealer at home. 6*s*.

Retayler or Handicraft 4*d*.

Husbandmen 3*d*.

Laborer 2*d*.

* * * *

The whole work is of 3 parts:

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[1] This paragraph, like much which precedes it, is extremely illegible, but appears to relate to a Poll Tax (graduated according to rank of the tax payer) similar to that suggested in the paper which follows.

1. To find the number, weight, value, & measure of all things which are to bee taxed.
2. To pitch the rates upon each of the said species so as to raise the sums proposed.
3. To collect the same without the exchequer.

No. 28

Heads of Irish Revenue

Of the People or Poll-mony upon Ages, Trades, Offices and Titles, vizt:

In Ireland are 1260^{m} Soules, which at 9*d.*[1] per head amounts to 47500 pounds per annum.

Of the said 1260^{m}, about $\frac{1}{5}$ are Children under 10 yeares old, vizt: 252^{m} at 10*d.* each to bee abated: vizt: 10500£.

Of the same 1260^{m} about $\frac{1}{20}$ are above 70 yeares old, or 63^{m} persons at 6*d.* each: 1575£.

Of the same 1260^{m} about $\frac{1}{12}$ are maryed teeming women, for whom 6*d.* per head is to bee abated: vizt: 2625£.

All which abatements amount to 14,700£, which being taken out of 47,500£ there remains 32800£, which is lesse then 44000£ by 11200£, which is to bee reapplotted upon trades, offices and titles. Vizt: 252^{m} & 63^{m} & 105^{m} (in all 420^{m}) being taken out of 1260^{m}, there remaynes 840^{m}, whereof 430^{m} are Males.

Of 430^{m} males aged between 10 & 70 yeares old, about 200^{m} may bee Artizans, which at 9*d.* per head makes 7500£.

Suppose 100 Peers, who one with another are to bee surcharged at 4£ each, which is 400£

600 Barronets & Knights at 20*s.* each—600£

2000 Esquires and Equivalent Officers and freeholders, at 10*s.* each—1000£

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[1] This figure is apparently the average sum per head which Petty considered should be raised (less the abatements afterwards specified) in order to secure a total Poll revenue of £44,000.

5000 Gentlemen, Lawyers & Electing Members of Corporations, Physicians, Priests, Merchants and wholesalemen at 6*s*. 8*d*. each—1666£.[1]

Of Rents

They have been represented at 68610£, but are here charged but for 67000£ because of many Controversies, Errors & Insolvencyes upon the same.

Of Pasture Land & Cattle

It hath been elsewhere said that in Ireland are 7 millions 500^{m} proffitable plantation Acres, whereof 7 millions are pasture; which at 30*s*. per acre is 10 millions 500^{m} pounds. And the Cattle grazing on the same (being 3500^{m} Collops) are worth 3 millions, 500^{m} pound. So as the Lands and Cattle are worth 14 millions, whereof the $\frac{1}{200}$ penny is—70^{m} pound.

Corne Land & Corne in ground

The remaining 500^{m} acres, making 800^{m} Statute Acres; whereof 200^{m} is meadow, and the other 600^{m} acres is sufficient to beare Corne for 1260^{m} mouthes. Now the said 800^{m} Acres are worth 1200^{m} pound, and the Corne in ground 800^{m} pound. In all 2 millions, whereof the $\frac{1}{100}$ penny is—20^{m}£.

Of Personall Estates

Note that what is contayned in the house is accounted Equivolent to the house it self, which was taxed at 24^{m} pound, whereas the personall Estate is here taxed at 25^{m} pound. By Personall Estate is meant Gold, Silver, Lead, Iron, Shipping, Corne in Hutch and haggard, Timber & Boards, drapery, saltery, grocery, haberdashery, upholstery, Statues and Ironmongers wares. Now an half-yeares Provision of the premisses for 1260^{m} heads, cannot bee lesse worth then two millions and an half; whereof the $\frac{1}{100}$ penny is 25 thousand pounds—25^{m} pound.

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[1] These various 'surtaxes' together make up a sum of £11,166 which, added to the £32,800 mentioned above, gives the total yield in poll money of £43,966, included in the summary at the end of the paper as £43,916.

Abstract of the whole Revenue

Customes	90,066
Malt	60,000
Cabbins	8,063
Other Housing	24,000
Drink Licences	12,000
Pasture & Cattle	70,000
Arrable & Corne	20,000
Personall Estates	25,000
People	43,916
Rents	67,000
	£420,045

No. 29

A COMISSION FOR THE SURVEY OF THE LANDS, PEOPLE, TRADE & REVENUES, IN IRELAND

Charles the Second &c.

Know yee that wee, intending the easy and Just Government of our good People of Ireland, and to promote the Peace and Plenty of our subjects in that Kingdome by Inlargeing and Emproveing the Plantation, Manufacture and foraigne Commerce therof, as well as to advance our Revenue, not onely without the violation of the Laws, but with and by the quiet and Inrichment of our said subjects; Doe out of our confidence in the skill, care, fidelity and Industry of our well beloved *A.B.* hereby constitute nominate and appoint him to bee our Surveyor Generall of the Lands, People, Trade and our Revenue of the said Kingdome.

That is to say of and for all the Lands lying within our said Kingdome of Ireland, and of all the Islands adjacent thereunto, or thereunto belonging, and of all the Howsing and other Edifices whatsoever, being or standing upon the same. With Full Power and Authority so far as the Laws of that our Kingdome will allow, for us and in our behalf, to adjust and settle the Divisions and Names of all the said Lands according to the most known Authentic and convenient Denominations thereof; and to make maps and Descriptions of the said Lands, according to a Clawse in the 73 page of the Explanatory Act, according to the said Divisions and Nominations aforementioned, mentioning the Quantity, figure, Scituation, Quality, propriety, Intrest, Tenancy, yearly value, number of years Purchase, effect as to Cattle and Corne, and all other Distinction and Qualifications relateing unto every such parcell or Denomination of Lands, which hee shall Judge necessary and convenient for the ends abovementioned.

And withall to take an accurate Account of all the People being and living within our said Kingdome, or going in or out of the same, with mention of their names, Surnames, familys, fierplaces, age, sex, mariage, Religion, Office, Trade, Country, with all such other Distinctions and Qualifications which hee shall judge necessary and convenient for the ends abovementioned, with an Account from time to time of all the Births, Burialls, Mariages and Removealls hapening among our said subjects. And moreover to take the best Account hee possibly and Lawfully can of the Revenue which hath accrued unto us out of every Parish or other setled Denomination of Land, by Rents, Excises, Customes, Lycences for retayling, Ale, Beere, Wine and Strong Waters, as also by tyths, first fruits, Tenths, and by all other Casualtys and contingencys whatsoever.

And withall to take an Accompt of all shiping belonging to our said Kingdome or tradeing in the same, and of all Goods that have been imported and exported for the —— years last past, and which from time to time shall bee Imported into or exported out of our said Kingdome; with the Dutys paid or payable out of the same, either according to the Book of Rates or *ad valorem*.

And withall to take notice and keepe Accompt of the prises current of such of the native Commoditys as hee shall think fitt within 200 of the principell markets within our said kingdome; as also the weekly prises current of the principall Commoditys in the City of Dublin, and of the weekly exchange between the said Cittye and six other principall places within our said Kingdome, and between ten such Cittys and Ports in fforraigne Parts as hee shall think most convenient.

And moreover to take notice of all the weight and fineness of all the species of Gold and Silver currant within our said Kingdome, and to take Accompte of Hospitalls, Colledges, Prisons, Schools, Corporations and other Societys, so far as hee lawfully may, &c. as may conduce to the Ends first abovementioned. And hee is hereby Directed and Impowred to digest all the said Accompts into One Body or Systeme to bee called the State Survey of that Our Kingdome; and to make such alphabets, Indixes, Tables, Schems and Abstracts of all the severall matters therein conteyned, with such observations, Inferences and Applications as will reasonably arise out of the said premisses, and as tend to the better and more easy Administration of our Government, and the Advantageous management of our Revenue. Hereby requireing all Officers Civill, Military and Eclesiasticall, and more especially the Lords Bishopps of their severall Dioces, and all Mayors, Sherifs, Justices of the Peace and Counstables, as also the Surveyor Generall of our Lands and our Auditor Generall, as also the first and second Remembrancer of our Exchequer, and the Registrars of all our Courts and also all the severall ffarmers and Managers of our Revenue, to bee aiding and assisting unto the said A.B. with all such authentic papers and Records gratis, as the said A.B. shall reasonably desire of them, as conduceing to the Accompts and ends abovementioned.

With power to the said A.B. to repaire, continue and rectifie all & every the said Surveys and Accompts from time to time, so often as any change or accidents shall requier the same. So as the said A.B. may at all times have them redy to give answer to any Question which may bee deduced out of the premisses, and which shall bee asked by the Chiefe Government and Councill of our Kingdome for the time being; unto whom the said A.B. shall upon Oath offer the notice of any such matter, advice or advertisement which hee shall conceive pertinent to any business in agitation or under the consideration of our said Chief Governor and Councill.

To have and to hold the office, trust and employment of Surveyor Generall of the Lands, Hands, Trade and Revenue of our said Kingdome and of makeing and maintaining the said State Survey dureing his naturall Life, with the yearly fees, stipend or sallary of twenty marks per annum to bee paid half yearly out of our Exchequer. Allowing also unto the said A.B. such or the like ffees, for any Constat, Certificat or Extraction of the said States Survey (being such Certificats as no other office already constituted under our great Seale can give or hath ordinarily given) as are usually given and taken in the offices of our Surveyor Generall of our Lands and our Auditor Generall for the like labour and merit, & which the Persons desireing the same shall voluntary give.

Moreover In Consideration of the great pains and expence, as also of the Invention, Continuance and Application of the said States Survey as an usefull Instrument of our Government, and for keeping the same from time to time in good method and Order, and for adapting thereof from time to time to the management and emprovement of our Revenue, Wee are graciously pleasd, that forthwith a just computation bee made of what Revenue wee have received for the —— years last past *communibus Annis*, and which wee shall receive for the yeare next to come; and that a good estimat bee also made of the naturall, ordinary, spontanious and self emprovement of our said Revenue which was and hath been for each of the said —— years, one above an other successively, according to the increase of the People which hath respectively hapned within the said —— years; which Accompts and Estimates are to see setled and approved by D.E.F. hereby especially appointed thereunto.

And wee do hereby grant unto the said A.B. In Consideration of the premisses, One fifth part of all the Revenue and other profits which shall accrew unto us, cleere and Nett, over and above our former Revenue stated as aforesaid. Provided the said D.E.F. shall in their heart and Consciences adjudge and Declare, that such Increase of our Revenue, hath probably been cawsed by the Light, Instructions and Directions ariseing from the said State Survey made by the said A.B. aforementioned, or from the skill, Care advice and Industry contributed by the said A.B. towards the management of our said Revenue. Which said fifth part or other allowance stated by the said D.E.F. as aforesaid, is to bee paid unto the said A.B. his Executors or Assignes in manner following, That is to say:

(*Endorsed.* "A Commission for the Survey of the Lands, people, Trade and revenues in Ireland.")

No. 30

A Coloquium between A. B. C. concerning a New Instrument of Government

A. What news?

B. Great news, there is a new Instrument of Government proposed. I came just now from seeing it.

C. And I beleive I have seen it too. Is it not a thing that consists of two parts?—One which the Author calls the Instrument itself, and another certaine inferences and deductions from it which I have heard in scorne calld the tunes that may bee plaid upon that fiddle.

B. I beleive 'tis the same.

A. I beleive 'tis some Whig that made it.

B. I beleive not, for if a Whig bee one who hates the King's person and family and the forme of monarchicall Government and even the present established Government, I don't remember anything that shews the Author to bee of that faction, nor indeed of any faction att all; but rather some well meaning man, that studys the peace and wellfare of his Country in all formes.

A. You are very kind to this Author, But I beleive you can't excuse him from a spirit of Innovation, Project, and Notions.

B. I doe neither excuse nor accuse him. As to his Innovations, I owne to have seen many things in that paper that I never saw before. If you understand by Project, a method of Forecasting and computeing, there is much of such project in this essay; and if you understand by notions, certaine peeces of knowledge, grounded upon sence, and emproved by reason, then the paper you speake of is very notionall.

A. No, no, I mean by Innovation, a new shuffling of the Cards, and the Indeavour of some Indigent fellow (that can't take pains) to mend his fortune by some trick of his witt, who pretends to Inrich the whole world whilst himself is poore, and who would get some suddain secret and enormous advantage, by deludeing the King and the people.

B. I doe not know the Intention and condition of the Author, But am resolved to examin the thing it self as severly as I can, and will, on the other hand, defend it against malicious and petulant caville.

C. Then I hope you wont bee angry to heare mee object all I can, for I have no malice against it. I have indeed some prejudice against projects and notions, tho I doe beleive the Author of this paper to have been a man of thoughts. Yet perhaps of too many thoughts, and those too nice, intricate, and superfluous, and runing too fast in the proofe of his ascertions. Well; I allow the thing upon the whole matter to bee Ingenious, but lyable to great objections of severall sorts.

A. I am glad you agree, that this work savours not of the Whig, nor of any sharking Project; and that one of you thinks the Author Ingenious, and the other that hee is worthy to bee deffended against petulances and Cavills. Wherefore I will stand by as a newter, and learne what I can from your dispute.

C. I will begin with objecting against the fesibility of the Instrument, for I think so vast a designe can never be accomplished.

B. Surely the work is vast, but I see no part of it to bee naturally impossible, and consequently all the parts (which is the whole) to be possible. I heare that hee who propounds this Instrument is the same man, who measured as much Line by the Chayne and the Circumferences in 13 monthes as would incompase the whole Globe of the Earth neer 6 times about, and that his work was confirmed by two Acts of Parliament.[1] I heare also that this man will undertake this, as he did that, upon a penalty & to finish this Instrument, in about a year's time. Nay that he had friends who will be bound in a Bond of 4 or 5000£ for his performance.

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[1] *E.g.*, Petty's Down Survey.

C. He wants no other advocate who hath you for his friend. I will give this objection—Now suppose the Instrument were made, doe you think it would play those four score or 100 tunes mentioned in the paper?

B. I doe verily beleive it, for it seems to me that the thing speaks [for] itself. For my part I beleive 1000 Inferences might be made out of those premises by a prolific Genious: for ye know that the 15 Books of Euclid Eliments, were spun out of a few, plain and easy Axioms, and wee made a late Instance of Wonderfull Conclusions drawn out of the Bills of Mortality, which no man medled withall in 70 years before the Author undertook it; and no man since hath either confuted, or added any more unto, those conclusions.

C. You are very favourable to your friends, But I doe not see, where he will have the numbers of the people, their Ages, Trades, Religions &c. Nor of value of the Lands, and the Interest which each man hath in the same.

B. The King (as I heare) is now about to manage every Branch of his Revenue by Commissioners which branches may all produce neer 300$^{\text{m}}$£ per annum. Now if this Gentleman might bee employed in manageing but $\frac{1}{6}$ part of the whole, in such Branches as hee would choose, I verily beleive, hee would pick up all those particulars which you think hee will want.

C. But at what Charge will hee performe this great worke?

B. I doe not know, But I beleive hee may well deserve as good a sallery as some other of the new Intended Managers.

C. Nay, if you come to Sallarys, [at] Once, farewell. Let him have but a good Sallary, and he will finish the Instrument by Leasure; hee'l drink Coffy, and smoake Tobacco, heare news and sett a few Clerks a scribling, and a ruleing of Books with Red Inke, and let the Instrument take it's chance, who shall examine it? And at length hee will have something or other made up into Books finely bound and putt into a fine press—and bee it right or wrong, there's your new Instrument of Government upon sallary!

B. Your experience of the world, gives you just reason to say what you doe. But I have heard, that this proponent delights extremely in the Demonstration; that by nature or by Custome hee hates imperfect searches into truth, and understands that if there be any flaw or falsehood in any of his conclusions, that the same are unfit foundations for further superstructures. Nay I have heard his friends say, that the exquisite performance of such a work, would please him more than his wages, and that many of the abler men in Ireland, were brought up by him. But supposing all this to bee false, if hee will undertake to finish the worke according to agreement by a certaine time, the onely question will bee of premium, or *quantum meruit*—which hee hath said shall not exceed the tenth part of the advantage which the King shall visibly make of his worke. That is to say, Lett it bee determined, how much the King did or shall gett and *re verâ* receive out of his Revenue, dureing the 7 years—of the present Ffarme, and the next yeare of management, and hee will be contented with one quarter thereof for his own Life, or 10 yeares, which quarter for life is not above a tenth part for perpetuity.[1]

C. I then see no reason, why hee should not be employd, nor do I see of what great mischiefe even his failer may prove. For if no purchase, no pay. The King is well enough. The worst representation that hee can make, will be a greater Light into the King's affairs, than ever yet did shine upon Ireland.

B. I am glad you agree with me so far, as the fesibility of the worke, the time of performance and the premium, and that at worst it will bee an Emprovement and a Light unto the management of the King's revenue and other affaires.

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[1] Cf. *supra*, p. 102.

C. I am pritty well satisfied in those points, But do very much doubt whether so much knowledge of the Kings affairs ought to be intrusted with any one or a few men.

B. You are now hard upon mee, Nor can I in a few words answer your objection, But if you will have patience, I will say towards it Onely what I beleive, vizt: If you suppose that the Instrument is to bee knowne, with the Inferences deduced from it, you cannot suppose that the Chief Governor, the Primate or the Chancellor, can descend to the Labour of makeing, understanding and applying it.

Secondly: I say that if the Auditor and Surveyor Generall, Master of Ordinance &c. have been of the Privy Councill, in order to assist the Board with such Arguments as did arise from their respective offices, and were Intrusted with the secrets of such their Offices, why might not the Surveyor of Lands, hands, Trade and Revenue of Ireland bee putt into the same capacity? And why should not an Oath and Honor ty him to Secrecy, as well as it doth the numerous Members of Circuitt in other matters? Besides, very few have tallents to discover much of this matter, tho' they should have opertunitys for it, and fewer would pusle their heads with such Ratiocinations as this office will require. It might bee here instanced that it would bee a frightful thing to lett it bee known, that 3 quarters of the Inhabitants of Ireland are Papists. Would not this knowledge strangely animate the Papists against the Protestants? I say No. If the Papists of Ireland therewithall also understand (as they would by this Instrument) that the non-papists of England and Scotland and Ireland are 10 for one to the Papists of the same, and that in Ireland itself where the Papists are 3 quarters of the people, that the non-Papists have 3 quarters of the wealth and almost all the Armes, with all the Authority. A contrary Instance is that it were for the Advantage and honor of England, to lett the world know, that Ireland pays 300^{m}£ per annum to the King; that Scotland can as well pay 200^{m}£ more; and that the rest of his Dominions can as well pay 100^{m}£ more; and that England is 12 times as Rich as Ireland; and consequently, that the King of England's Dominions might yeeld a Revenue of four millions and 200^{m}£ per annum (Whereas the Revenue of the most Terible King of France, perhaps is not above seven millions 200^{m}£); and that in Ireland itself, there bee more horses fitt for war, then the King of France can bring to invade it.

C. I am satisfied that truth at long run will doe no harm, surely this Instrument will not disparage the King of England's Dominions; for I never thought them till now able to pay four millions per annum. Wherefore let me pass to another objection, which is, that, if this Instrument, should take effect, Ireland would be better governed than England, nay then any part of the world, and as well as any man can govern his private family or Estate; and consequently that Ireland would soon overtop England, and would *pro rata* exceed it even in wealth, which England would never endure.

B. It is high time that Ireland should now att length be improved, and cease to be a burthen to England. For assure yourself that tho Ireland should thrive never so much, yet England will att length sheer off its superfluities. For the voluptuaries of Ireland thro off their loose coin into England and the thriving men of Ireland doe purchase Land in England, and we see that most of the great Estates in England are *pari ratione* spent in or near London. Besides an experiment of this nature, may be better tryed upon poor Ireland than upon proud England; to say nothing that the Kings Government is somewhat more absolute in Ireland than in England.

C. My next Classe of objections shall be, to examine whether (the Instrument being made) such tunes can be plain upon it as are pretended. To which purpose I desire you, if you can, to shew me, how the Equivalent of a Land Registry may, without a new Law, be introduced by this Instrument, as in the Article is mentioned.

B. You have hit upon one of the most difficult points of the whole paper. Nevertheless I shall offer towards it what occurs to my understanding in the case, But you must have a great deal of patience, and be very Attentive.

C. That I will; and I desire you not to be too breif, nor to deny yourself the free use of your own method.

B. My method is to begin with explaining of terms, and in finding out words of single and plain signification, wherein to express myself. Wherefore you must first note that by a Land Registry I understand a new Account of the Titles of all Lands and of the Deeds and Evidences, whereon the same are grounded, to be made publiq, which most men are unwilling to discover.

C. How will you make them discover those things without the compulsion of a Law?

B I will shew them that whereas 10 per cent. is paid for the Interest of mony in Ireland, how they may have the same for 4 per cent upon the security of such Lands whose title is exposed, allowed and registred as aforesaid.

Secondly: I believe that there is no man but will value Lands so registred at 2 years purchase before the Lands that are not registred, and att 4 years purchase before such Lands as refuse and dare not to be registred att all.

Thirdly: I conceive that Lands whose denomination, quantity, figure, situation, spelling, Bounds, rack rent, effect in feeding of Cattle and producing of corn, Tenancy, Markets, & Title, are all cleared, and ascertained, under an authentick & inimitable seal, will be as ready coined Gold & silver, & better then the same for most uses; & consequently conclude that for thesse advantages all men will covet to obtain them by registring theire Titles as aforesaid, and I doubt not that 4 parts of 5 of all the Lands in Ireland are able to indure this registry.

C. But what doe you say of the other 5th part which cannot indure it?

B. I say that all rivals and pretenders to the said 5th will brings theire actions and ejectments, and that the title of the same will be tryed within a year or 2, and that after judgment the persons who have right will register.

C. But you forget to satisfie me how such a register may have mony att 4 per cent Interest upon the registred Lands.

B. I doe not forget it, but desire you to take my word for it, and to consider that in England, Holland and in some other places, where the security is absolute and clear, that mony may be had rather for less than more than 4 per cent.

C. Saving to myselfe the right of being better satisfied, that mony may be had for 4 per cent as aforesaid, pray tell me what other advantages may be had besides the 3 aforementioned?

B. The advantage of letting the same again att 6 per cent, upon the security of goods pawned & deposited, and at 7, 8, 9, & 10 per cent upon less securitys.

C. I have heard that the Lands and reall Estate of Ireland is now worth to be sold, between 12 & 15 millions, and I am not satisfied that One million thereof is given and taken upon Interest in all Ireland; and consequently, the temptation for a registry which you propound will effect but a small part of the whole land.

B. I confess it that it will effect but a small part att first & att one time, But say that it will effect the whole successively, and in a small number of years, and that all men will forthwith capacitate theire

Lands to be made better than ready mony for all intents and purposes.

C. How shall this registry be securely managed?

B. By many ingenious and solid contrivances which need not to be described att this present; for it is sufficient to give and shape out the patch when wee see the hole.

A. I acknowledge myself to be much edifyed by your discourses, and have a good opinion of this Instrument, which for ought I see is composed all together of matters of sense; and if the uses thereof are made out by a sort of mathematicall reasoning. And this is all I can say to it.

C. You have said enough, nor could Demosthenes or Cicero have sayd more for anything they would praise, or recommend.

B. God send mee the use of things, and notions, whose foundations are sense & the superstructures mathematicall reasoning; for want of which props so many Governments doe reel & stagger, and crush the honest subjects that live under them.

(*Endorsed*. "Colloquy upon the Instrument" 1682.)

V

RELIGION

(31) Religion—(32) Effects of a Good Religion—(33) An Argument for the Church—(34) A Papist or Roman Catholic represented—(35) Religio Christiane Puerilis, or A Protestant of the Church of England represented—(36) Religio Catholice Catholica—(37) Twelve Articles of Faith—(38) The Mysteries and Miracles of Faith and Religion—(39) Church Service—(40) Of Civil and Spiritual Power—(41) An Oath of Allegiance and Supremacy—(42) Liberty of Conscience—(43) Liberty of Conscience and Worship—(44) Fees for the Parson of every Parish—(45) A Manual of Religion and Theology.

RELIGION

"AS for Religion, I die in the profession of that faith, and in the practice of such worship, as I find established by the law of my country. Not being able to believe what I myself please, nor to worship God better than by doing as I would be done unto and observing the Laws of my Country; and expressing my love and honour to Almighty God by such signs and tokens as are understood to be such by the people with whom I live; God knowing my heart even without any at all."

So wrote Petty in his Will, which was drawn up in 1685—two years before his death. His MSS. contain a quantity of papers on Religious questions, some of them loose, others collected together in a large quarto volume. I have here printed only a small selection, sufficiently typical of the rest.

Nos. 31, 32, and 33 are without date. In the first two Petty gives us his general views about 'Religion' in the abstract, but No. 33 appears to be an argument in favour of the Catholic Church, though it is not actually named as such. The script and context of this paper indicate that it was written at an early date—during the Commonwealth—and if this supposition is correct, the views of the writer must have undergone a considerable change in later life.

In 1685 there appeared a pamphlet entitled *A Papist misrepresented and represented*, signed J.L., and Petty tells Southwell that he has written '2 sheets' in answer to this 'mighty book' (*Corr.*, 10th October 1685). This was no doubt the MS. printed under No. 34. No. 35, *A Protestant of the Church of England represented*, is a continuation of that reply, with a Cathechime, or *Religio Christiana puerilis*, which earned enthusiastic praise from Southwell (*ibid.*, 15th October 1685).

No. 36 is on the same lines and, with Nos. 37 and 39, contains Petty's ideas of a 'Natural Religion' which might be accepted by all—without the risk of Eternal damnation, even though there might be inability to believe everything in the Bible and Prayer book (No. 38).

No. 40 is an attempt to define the limits of Spiritual as against Temporal power, with the object of preventing the first from interfering with the second, while No. 41 puts the same ideas in the form of an Oath of Allegiance to which the Catholic subjects of King James II might subscribe without doing violence to their religious convictions.

Nos. 42 and 43 are concerned with *Liberty of Conscience*, a matter on which Petty was never tired of insisting. With his curious fondness for translating everything into terms of figures he goes so far as to assert that such Liberty would increase the efficiency of all workers by fifty per cent.!

In a former paper (*supra*, No. 27) we have seen that Petty wished to charge the Parsons with duties other than those relating to the souls of their flocks. In No. 44 he would have them act as public notaries, postmasters, overseers of schools and public-houses, health inspectors, and registrars for their respective parishes. By this strange combination of spiritual and temporal offices he estimates that they would increase their average income from £65 to £110 per annum.

No. 45 contains the heads of a *Manual of Religion in thirty-one chapters*. Petty died during the year in which it was written. The reader of these papers will perhaps share with their editor a sense of relief that he is spared the perusal of the volume (or volumes) which these thirty-one chapters would, if completed, have involved.

No. 31

RELIGION

1. Man is a Religious Animall, and onely men hope that their Earthly Soveraines will deale very justly, when such soveraines beleive there is a most Just God above them.

2. Men, either for the Love of God or the feare of Hell, will forbeare doing such mischief to their Neighbor as the Law canot reach.

3. Men, after prayer to God, proceede more cheerfully on their businesses when they believe that such prayers shall procure them successe.

4. Men beare paines & wrongs more patiently, when they hope that God will ballance all in the next life.

5. Men will beare true testimony, when they believe they may suffer for the falshoods hereafter, which does them no good here.

6. Soldiers will bee most valiant & faithfull when They believe Death to bee the doore of happines.

7. Successors to Crownes will not kill the possessor when they believe God will punish them proportionably to their circumstances.

8. Hopes of a better & New life after this, is a greater comfort to Old men when contempt, Infirmitys & paines come upon them.

What is vulgarly meant by Worshipping, honoring, & glorifying God

1. Enriching, obeying, & fighting for those who pretend to bee his priests and ministers.

2. Praying to God for such benefits as Man canot give us, by choice of words, termes, places, gestures, garments &c; even though he grant not our desires which are inconsistent.

3. By patheticall Metaphoricall expressions & allusions to set forth in a generall way his power, wisedom, mercy &c, when wee either deny or ignore them in particulars.

Disadvantages to the world by the same

1. The vast expence of sacrifices & priests, temples & holydays, and study of Inexplicable matters.

2. The great bloodsheds by wars, & punishments for religion, & sacrificing men, women & children.

3. Relyance upon testimony founded on Religion, where there was None.

4. Miscariages by superstitions, Confidence in prayer, charmes, reliques, Invocations &c, future rewards &c, visions, dreames, apparitions.

5. The world hath not encreased, by reason of the needlesse restraints put upon conjugations.

6. Hypotheticall pretences of religion (where really was none) hath done many great Mischiefs to the credulous & better sort of men.

7. The Notion of Eternall paines & pleasures, & of Election & reprobation, & the paucity of them that shall bee saved, hath much distressed the World.

8. Religion doth not encourage reall arts & search into God's works.

9. Civill lawes may for the most part effect what Religion pretendeth to do.

God would be much honored

1. By finding out the use of the fixed stars.
2. Of the matter wherewith the Globe of the Earth is fill'd.
3. The use of most animalls, vegetables, & mineralls.
4. The origine of man & animalls.
5. Of animalls eating one another.
6. Of the paines & evills which animalls suffer.
7. Of generation by the way of male & female.
8. Of the different ages & gestation of animalls.
9. Of germination in animalls, vegetables &c.

No. 32

Effects of a good Religion

No man ought to disturb another in that Religion

1. Which makes & keepes him good morally.
2. Which keepes him from secret sins not cognisable by the Magistrate & contrivances of the same.
3. Which gives him courage in adversity.
4. Which keepes him from dreading death & the infirmities & paines of Old age.
5. Which makes him conformable to the Lawes of the Land & Customes of the Country.
6. Which breakes violent passions & appetites.

No. 33

[An Argument in Favour of the Catholic (?) Church]

It being granted that there is a Religion, and that the Christian is the best kind, it is proved that the ——[1] is to bee preferred before any other species thereof, by arguments both *ad hominem* and *ad rem*, drawn from sence, Reason, Authority of Holy Scripture, and other Writings.

1. It hath more sensible and Rational argument then any other.
2. It hath sensible signs and markes and whereby to be knowne—others not.
3. It subsisteth upon a principle different from all others.
4. It hath always enjoyed the name of ——[2] and others have taken to themselves other names.
5. It is more eminent in respect of its first rise then any other now in use, [and] since its last returne and reviving, as may appeare to sense.
6. [It is] That which is most ancient, and hath longest continued with approbation and withstood opposition in all tymes and ages, [and] hath most innate and reall goodness.
7. [It is] That which hath most grounds to prove the truth of the Christian Religion, for it celebrateth times, visiteth places, keepeth reliqs and representations of notable actions, things, and persons, which others abhorre to doe.
8. All other religions hate that as their common enemy.
9. It taketh most care to propogate itselfe.
10. It hath beene the most fairely introduced.
11. The particular points thereof hath the same

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[1] [2] The name of the Religion in support of which this paper was written is in each case left blank in the original MS. The context, however, makes it clear that the Catholic religion is in question.

ground of verity whereupon other religions accept the Scriptures themselves.

12. Other religions take the words of men for the true translation, interpretation, Reading, evidence [and] most authenticq copy of the Scriptures.

13. The Rule whereby others goe, leadeth them into devision, confusion, perplexions, schism.

14. There bee more learned and godly men of that then of any other.

15. It hath a sacrifice and more shew of a Religion then any other, and placeth noe Religion in a *fama obliqua*. N.B. It calleth not sermons the word of God.

16. It hath more helpes to devotion, as Holy Houses, press, pictures, ornaments, monasteries.

17. It hath the best government, and most rationall (though you should not allow it a divine) waies to end controversies.

18. Others know their own tenets.

19. A man of any other is bound to examine all controversies that ever have beene, are, or shall bee.

(Mem. Men ought as well to looke back upon what they have deserted, as to looke only forward.)

20. It is the most practicall.

21. It hath most grounds in Scripture generally taken.

22. Whether men goe by the Spirit or by Reason &c., it is surely likely that this shall as well have the helpe of them as any other.

23. More used; more constant Martyrs, dying more cheerfully.

24. It now flourisheth in all places, and all idle predictions concerning its fall are found false and vayne.

25. It is the best for a Commonwealth, in taking away the occasion of wrongs &c. between man and man.

26. It holdeth no point more destructive to Government or Magistracy then others, nor so much (?).

27. It is suppressed where all others are tolerated, out of feare of its prevaleing.

28. It is unlikely that God would sett us a groping and leave us in the dark.

29. It is unlikely that men should see more into Religion now then heretofore.

30. It hath by its prudent government prevented experiments innumerable (?).

31. It is a Church most like a Mother in many respects.

32. The whole current of ancient Fathers are for it.

33. It is unlikely that a few occasional epistles &c. should contayne intentionally a whole systeme of Religion—Some writings of the apostles are best.

34. *Invoc: sanct: per mort: pict: lingua ignot: coram: mult,*[1] are all rationall, though said to bee ridiculous.

No. 34

A PAPIST OR ROMAN CATHOLIQUE REPRESENTED: 1685

Preface

There hath been a Book lately published to shew how the Papists are misrepresented by non papists, & how the author of that book "J.L." would have them represented & understood. To which Book is objected that the whole Book is but the saying of J.L., whereas J.L. should in his Collume of Misrepresentations have used onely the words of the best & most authentick non-papist authors, & In his Collume of representations hee should have put onely the Texts of Councills, Canons &c, especially that of the Councill of Trent. But since hee hath used his owne words onely, Liberty is humbly cravd to do the same in a shorter accompt of that matter, vizt:

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[1] These truncated words evidently represent certain phrases or tenets of the Catholic Church over which were fought the religious controversies of the day. It may be suggested that they stand for *Invocatio Sanctorum per mortalem picturam lingua ignota coram* (?) *multis.*

[Memorandum. That the word 'Papist' is not used as a name of Reproach or derrogation, but onely to signify a person who holdeth the Pope or *Papa* to be chiefe upon Earth.

By 'Roman Catholick' is meant a person who is of the Religion Established throughout the whole Roman Empire, the Papacy being the Ghost of that Empire deceased.[1] Upon which account the words 'Papist' & 'Roman Catholick' may well enough signify the same thing.]

1. He holdeth that Jesus Christ did bequeath all his power upon Earth to Peter & to Peter's successors, to the end of the world; & that all men should obey them accordingly, upon the penalty of eternall Torments & the loss of Eternall Joyes. And particularly that Peter and his successors have power to retain & forgive sins which the best men doe comitt often every day, and thereby render themselves obnoxious to eternall misery. So as the said Peter & his successors have power to give greater reward, & inflict greater punishments, than any King or other Temporall Soveraign whatsoever; and are therefore rather to bee obeyed than any of them.

2. Hee also holds that Peter and his successors could devide the whole habittable Earth into as many Precincts of Land (called Dioceses) as they pleased, and could appoint a Bishop to each, with the same power as themselves had over the whole proportionably; & that an Assembly of those Bishopps is the Representitive of the Church,—that is in truth of all mankind, altho some restrained the church to that part of mankind onely who have been baptised. These Bishops by certain numbers & classes are put

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[1] This phrase is borrowed from Hobbes: "The Papacy is no other than the ghost of the deceased Roman Empire, sitting crowned upon the grave thereof" (*Leviathan*, part iv, chap. 47, p. 306, 1st ed.).

under ArchBishops, & ArchBishops under Primates. The Bishops have power to make Priests & Deacons, & severall Bishops to consecrate another Bishops. The Bishops are to be assisted by Prebends & Cannons, and the Temple where the Bishop resideth (called Cathedrall) & the worship within the same, is managed by a Dean & Vicar Chorale. The Jurisdiction of the Bishop is managed by himself & Arch-Deacon & other officialls. And the Priests of the Diocess are by certain numbers to be overseen by Rurall deanes. And all Bishops, Priests, deacons, &c, are called Clergy (or God's portion of the People) and are exempt from the Jurisdiction of temporall magistrates, whose authority ascendeth & riseth from the people, & descendeth not from God as the other doth. This Clergy is maintained by Lands appropriated for that purpose, & by the Tithes of all that groweth or proceeds out of other Lands.

This power is called Spirituall, as if it regarded onely the Sperritts & Souls of men when seperrated from the body, with the Eternall concernments of the Soull, & not any Temporall matters. Whereas indeed This power (tho called Spirituall) is often applyed to the life, liberty, limb & estate of men in this life, even whilst the body & soul stand joyned together; and is very much mixt & perplexed with the Temporall, Carnall, Corporall & Civill power conferred by the people upon their magistrates, called Kings, Emperors, Sennates, Parliaments &c; which mixture doth much distract the people & is a frequent cause of warr & bloodshed.

3. A Papist doth hold that Adam's sin made all his posterity guilty of that sin which is called originall, the due punishment whereof is Eternall torments. They say that Jesus Christ, by his merrits and suffering, took away the said Eternall torments from believers, and some say from all mankind, as also the guilt of mortall sinns, but left a temporall punishment to be inflicted, even where the guilt & Eternall paines

were forgiven. Which Temporall punishments are taken off & answered (1) By the misteryes and Callamityes of this life. (2) By volluntary punishments as Alms, fasting, discipline &c. (3) They are ballanced by meritorious works. (4) By the works of supperarogation which have been performed by others, and whose merrits is disposable by the church. (5) By pains to be sufferd after naturall death, & before the generall day of Judgment, comonly called the pains of Purgatory. (6) By the generall and particullar prayers of Priests and other good men & faithfull persons. (7) By confessing of the sins for which these pains are due, to Priests, & receiving the Eucharist. (8) By the Pope's Indulgences.

4. A Papist also holds that besides the sacrifice of Christ's body (which was born of the Virgin Mary) offerred upon the Cross, there is another dayly sacrifice of Christ's body made by the transubstantiation of bread, which may be made in millions of places at once. All which sacrifices, together with the other made upon the Cross, do not absolutely take off the temporall paines abovementioned, altho they conduce much thereunto.

5. They beleive that all things do consist of substance & accidents, & that the substance of one thing can goe into another thing & vice versa, (which is Transubstantiation), and leave behind it the accidents of the first thing. And in particular that after a Priest had said *hoc est corpus meum* over a wafer, that the substance of the said wafer goeth away, or is chang'd or annihilated leaving its accidents behind; and that the substance of Christ's body by a new creation or otherwise, cometh in the Room, leaving its accidents, wee know not where nor how.

Moreover they beleive that not onely the substance of the flesh, but the soul of the man Jesus, together with the Godhead of Christ, (being in all three substance) doe substantially unite themselves as one substance, and take the place of that substance which went out of the wafer, and support the accidents of the wafer. And if the substance of the wafer be corporeall, then instead thereof there comes in one corporeall substance of flesh, & two incorporeall substances besides, vizt: One of the soul of the man Jesus, & the other the Godhead of Christ as aforesaid.

They say that this Transubstantiation is done by miracle, altho Sence (which is the onely Judge of Miracles) doth deny the fact; & that this change (vizt: that Christ should look like a wafer), is no more than that Almighty God should look like a Carpenter or like a dove, or that Christ should come into a room when the doors are shut, or go in or out of his Mother's womb, without lessening the visible marks of her Virginity. By all which it follows that the Priest is the creator of his own Creator.

6. A Papist holdeth that transubstantiation cannot be made, nor other Sacraments administered, without the intention of the Priest; and consequently that no man can be certain of his baptisme, of his Priesthood, of his marriage, nor of his ever having received the Sacrament of the Eucharist—which is to destroy all the benefits of Religion.

7. They also hold that the difference of veneall & mortall sin is so small that Causuists disagree often about it; and yet the difference of the effects is eternall weall or eternall woe, or as Heaven & Hell &c.

8. They allow such a worship of Images as visibly looks like the ancient Idolatry mentioned in the Scriptures, and like that Idolatry which is now practiced in India and other Easthern Countryes. They think they worship Christ by kneeling & praying before a Picture, which they have no ground to beleive is the Picture of Christ, nor more than the Casuall fancy of the Painter.

9. They also pray to the Souls of dead men whom they conjecture to be Saints, whose state and condition they cannot know, and doe attribute to such souls the power of seeing & hearing at Immense

distances, which power is peculiar to God alone; and doe thereby needlessly incurr the danger of Idolatry.

10. They hold that it is not onely convenient to take advice of a knowing faithfull friend about Soul concernments, but necessary upon the perrill of damnation to make known unto some Priest all the faults that ever they have comitted, and all the facts that they doubt to be sin, with all the circumstances of the same; & that the Priest is bound to conceall such confessions, altho' by the discovery of them many thousands may be saved from death and the whole state from destruction.

11. The Papist holdeth That if a man confess his mortall sins to a Priest, if he be sorry for those sins, by attention (?), as haveing brought him under the danger of great punishments, and doth withall actually receive the Eucharist, That the guilt of such sinns is forgiven & that the Church may also Indulge temporall paines due for the same. That is to say, That the Pope & Priest can clear the whole matter, without any contrition or sorrow for haveing offended God.

12. The Papists hold That whoever beleives all the Articles of the Creed and keepeth all the Comandements of God, and doth dayly and sincerely pray to God and worship him in the wayes prescribed; yet, if he doth live out of Comunion with the Church of Rome, and doth not beleive concerning the power of the Pope & the Priest as aforesaid, or denyeth any Article of the Councill of Trent, That he shall (notwithstanding his faith and good works above mentioned) be damned to eternall torments.

Wee have thus represented a Papist, without mallice or exasperation, in a few main points, without so much as questioning whether the said points be true or false; haveing omitted many particullars of less weight, although branches of the same Tree, these few being sufficient to shew as followeth, vizt:

1. That a Papist would have the Bishop of Rome

to bee the Vicar of Jesus Christ, and to be supperior, throughout the whole world & to the end thereof, unto all Kings, Emperors, & other soveraign states. And tho such soveraigns are in truth but the Ministers & Executioners of the Popes decrees, That he can depose them as hee pleaseth. That such Kings and Emperors that are in Comunion with him, are his sheep and he their Soveraign Pastor, but all the rest are wolfs.

2. That a Priest made by the Pope's authority is the Creator of his own Creator, & that he can dayly offer up Christ in sacrifice, as Christ once offered up himself upon the Cross.

3. And that the inflicting or releasing the temporall pains due to sins (whose guilt and eternall punishment is forgiven) may amount to the power of inflicting or releasing of torments for millions of millions of Ages. And that a Priest by hearing a sinner's confession and absolution thereupon, and withall putting the Sacrament into his mouth, can force him into Heaven and intitle him to Eternall Joy.

4. The Clergy have power over the Souls & Secrets of all men by Confession. They can dispose of Successions to Crowns and inheritance to Estates, by their power in Matrimoniall Causes. They can impoverish any Kingdom, by imposeing of Holly-dayes & forbidding labour & trade. They can ruine the health of any people, by imposeing fasts and abstinence from wholesome foods. They can inrich any Towne, by authorizing the worship of whom they please as a saint within the same. And consequently the Clergy of the Church of Rome have all the power that any man can conceive or imagine, and all men are obliged to them by infinit rewards and punishments.

So as a man may reasonably suspect that the admirable contexture and frame of the Popish Religion, is but an Engine or Instrument to acquire the vast powers and profitts abovementioned to the teachers and supporters thereof. And that the intermixing of those powers called Spirituall with the ordinary, necessary, visible & temporall powers of Kings &c over the lives, limbs, Libertyes and estates of the subjects, is inconsistent with the possible peace & quiet of the people. And where the said 2 powers doe absolutely agree, the same tendeth to an absolute dominion over the souls & bodies of the people, over their sence & reason & all their other facultyes whatsoever. Whereas Spirituall power concernes onely the soules of men after this life, which needs not interfere with the Civill or temporall authority.

Wee conclude that, since people could not bee brought by their naturall reason to the submission and beliefs abovementioned, That the same hath been ingeniously attempted by frameing the Popish Religion according to that old saying: *Ideo Religio facta fuit a sapientibus viris, ut quot ratio non potuit religio ad officium duceret.*

No. 35

RELIGIO CHRISTIANA PUERILIS, OR A PROTESTANT OF THE CHURCH OF ENGLAND REPRESENTED

Hee protesteth against the abovementioned doctrines, which Papists are represented to hold. Hee thinks that the Soveraigne power of England may, in that Country, order the externall Worship of God; & his religion and faith are comprehended in the following old Lattine Catechisme: (some compulsation being had of the words *Vitâ post mortem in suppliciis diuturna*, which are in it) viz:

Religio Christiana puerilis

Fune baptizatus es? &c.[1]

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[1] I have omitted the rest of the Latin version of this catechism.

Which Catechisme may be translated into English thus vizt:

The Christian Religion of Little Children

A. Art thou baptized?

B. Soon after my birth I was washt in the water of baptisme in the Name of God the Father, Son, and Holy Ghost. Whereby I was made a Child of God, a member of Christ and heyre of the Kingdome of Heaven.

A. From whence hadst thou these fruites of baptisme?

B. From God's grace towards mee and my faith in him.

A. What is that faith of thine?

B. It is that whereby I believe in God the Father, maker of Heaven and Earth, and of all things in them. In his Son, the Redeemer of fallen mankind, and in the Holy Ghost who sanctifies the Elect.

A. What are the duties which are the fruites of this faith and grace?

B. By this grace and faith I am brought to believe, love, fear, honor, contemplate, worship, trust, thanke, praise, and serve God. And also to love my neighbour as myselfe, by not doing to him what I would not have done to myselfe; by helping my parents, obeying magistrates, performing covenants; by hurting no man by words or deed, nor by wishing him harme; by forbearing theft and fraud, as also reproach and calumny; by being sober and chast; by not desiring other men's goods, but living quietly upon my owne labor, and behaving myselfe discreetly and modestly in whatsoever course of life it shall please God to call [me] into.

A. What things are we to beg of God in prayer?

B. His grace to myselfe and all men; that wee worship God according to his will; remission of sins; all things necessary for the soule and body, and to bee kept from all the evills and dangers nearest unto them, from Sin, the Devill, Everlasting death, and from a long life after death in misery.[1]

A. What helps have wee for our beliefe, worship, and good workes?

B. Wee have besides baptisme, the Lords supper, whereby wee partake of the merits of Christ our Redeemer and are fed to life or joy everlasting.[2]

No. 36

RELIGIO CATHOLICE CATHOLICA. 1685

Naturall and Universall Religion

1. Is to believe that all things were made by design of one God, who is the first and common cause of all.

2. To honour God, is to seeke out the cause of every effect, and the cause of cause, till it end in God, with the Symmetry and harmony of all his works.

3. To praise God, is by the ablest students to declare the wisedome of God in his works in great assemblies, and to put the same into exquisite verse and sing the same in music, in Temples adorned with the best pictures of his acts.

4. To heare in those Assemblies the weekly commands of the representatives of the congregation.

5. To heare the Priest of the Congregation set forth the remarkable works of God hapning within the habitation of the congregats.[3]

6. To consult the common peace, plenty, and preservation, of all and each of the Congregats, viz: to witnesse bargains, reconcile differences, to help impotents, marry youth, cure the sick, bury the dead, commemorate worthy men deceased, conquer passions,

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[1] This is the phrase (in the Latin version *Vita post mortem in suppliciis diuturna*) for which Petty desired (*supra*) 'some compulsation.'

[2] The catechism appears to be unfinished.

[3] Congregats = members of the congregation.

confesse several offenses; and learne the civill laws of the Society.

7. To keep feasts of Joy and Thanksgiving upon solemn [occasions], when the people are to put on their best garments, and eate the best meates, with sports, and during which to expresse the happiness for which they came to give thanks.

8. To keep fasts and humiliation *pro re nata* when any special and public calamity befall them, when the people are to appeare in such a condition as they desire God would avert from them.

9. If any believe in any particular powers, or follow the doctrine of any particular prophet, philosopher or lawgiver; let them worship over and above the publiq with their owne family.

No. 37

12 ARTICLES OF FAITH: 1686

1. I believe That there is one Comon cause of all things.

2. That there was an Architect of the world.

3. And a maker and designer of man.

All which I call God.

4. That God can do all things possible, and doth know all that can bee knowne, and shall continue the longest time wee can conceive.

5. That Hee is a Rewarder of them that seek him.

6. That the soule of man is the breath of God, and subsists after its seperation from man's body.

7. That Jesus of Nazareth was his onely Son.

8. That all Soveraignes are his Lieutenants within their severall precincts.

9. That there are rewards & punishments after this life.

10. That Christ's coming was to repaire the sin of Adam.

11. That a Church is 2 or 3 gathered together in the name of God in order to worship him.

12. To do as wee would bee done unto, is fulfilling of the Law, The prophets, & the Will of Christ.

13. Faith is the Beliefe of those persons who say they have spoken with God.

No. 38

THE MYSTERIES & MIRACLES OF FAITH & RELIGION: 1686

1. That the Heaven of fixd stars, The Sun, Moone, Earth, & planets, all Animalls & plants, were made in one week out of Nothing.

2. That Man was made out of the dust of the Earth & a Woman of one of his ribs, taken out in his sleep.

3. The Garden of Eden, The tree of Life & of the knowledge of good & evill.

4. That a serpent talked with Eve, did overcome her in discourse, persuade her to breake God's Comandement, & thereby made all her posterity lyable to Eternall punishment.

5. That men heretofore livd neere 1000 yeares.

6. That 1500 yeares after the world was made, It & all Mankind upon it were drownd, excepting Noah & his 3 sons & their wives, with a paire of each animall.

7. That God comanded Abraham to sacrifice his son by killing him.

8. That Balaam's asse spake.

9. That the Sun stood still.

10. The opening of the Red Sea to bee dry.

11. Moses & the Magicians Miracles.

12. Elias went to heaven in a fiery chariott.

13. Elijah's miracles.

14. That there is a Trinity of God in 3 persons, not revealed to the world in 4000 yeares after the Creation.

15. That One of these persons *Aeternogenitus* (?) was borne of a Virgin 1686 yeares ago.

16. That the Holy Ghost appeard as a dove.

17. That God should bee crucifyed as a Malefactor.

18. That at his death The dead did rise, the sun was eclypsd at full moone.

19. That he rose from death the 3rd day, having in the meane time been in hell.

20. That hee ascended up into heaven & shall at a day unknowne bee Judge of all men.

21. And decree some to Eternall Weale & others to Eternall woe. (Raising Lazarus. Sampson's prodigious strength in the 9 locks of hair.)

22. That baptismall water washeth away originall sin.

23. That bread may bee transubstantiated into flesh, soule, & Godhead.

24. That the Sin against the Holy Ghost can never be forgiven, & cant be knowne.

25. The Soules of dead men can heare & see at Immense distances.

26. That the Pope is Christ's Vicar all the world over.

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I, believing that God is, That hee is a rewarder of [them] that [seek] him, That whoever feareth him & worketh righteousness shall bee accepted of him, That wee ought to heare them who sit in Moses' chayre, That to do as wee would bee done unto is the Law & the prophets—I cannot think that God, the father of mercy, will damne them to Eternall torments, who obey authority and conforme to ancient practise, and the Law of their Country.

No. 39

Church Service 1686

1. Let the 6 first chapters of Genesis, The 52 chapters of St. Luke's gospell and the Acts of the

Apostles,[1] & the 20 chapters of the Catholiq Epistles of Peter, John, James & Jude, bee read every half yeare; viz, 3 upon every Sunday.

2. Let the Psalmes & Proverbs bee read over in the same time.

3. Let the comon formes of prayers & Lesones [be read] according to times & seasons.

4. Let the homily weekly [be] appointed by the Magistrate.

5. Let marriages bee publiq.

6. Let Sacraments, burialls, & churching of women bee *ad libitum* & [at] each man's perill—as also feasts & fasts.

7. Let the Churchmen bee the measurers, registers, accomptants, depositaryes &c for the people.

(*Endorsed.* As above.)

No. 40

OF CIVIL & SPIRITUAL POWER

There be two sorts of Powers, Authoritys and Jurisdictions; one whereof is Civill or Politicall, Humane or Carnall, Corporall or Boddyly, particular or Locall, temporall or for this Life. This Power arises from the People, as from its ground, and assendeth upwards from the whole people into one point or king; & extends to the Life, Liberty, Limb and Estate of all men. It can doe whatsoever is naturally possible to bee done. This Power well form'd is irresistable; and consequently all Its Laws are just, and to bee obey'd, and as *Vox hujus Populi est vox Dei*. Nor hath the Spirituall Power hereafter mentioned, power to crosse or quash or forbid obedience to the Laws of this Civill Power, But are obleiged by the will of God to strengthen the same, and see it executed.

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[1] Petty correctly treats these two as one book.

The other sort of Power or Authority is Eclesiasticall, Divine, Spirituall, Catholiq & perpetuall. This Power decendeth from God upon the People, concerneth the worship of God, relateth to the Spirits & Souls of Men seperated from their Boddys, is Catholiq or Universall, as also perpetuall or Eternall, takeing place onely after this Life; and is instituted to inforce and put in execution the Civill Laws abovementioned, and not to clash with or contradict them.

These two sorts of Laws are not contrary but concurrent. For whereas man may designe and intend to break the Civill Law without effect, and consequently deserves no humane or corporall punishment in this Life; yet such Intentions and Desires do deserve a punishment to bee inflicted upon the Soule or Spirit of the offender, but not till after this Life; and to end either into admission into an Eternall Life of Peace and Joy, or into a Second and everlasting death or annihilation.

Moreover men may commit false Crimes and breeches of the Civill Law so secretly, as to escape the temporall punishments provided by the Civill Law against them. In which cases the Ecclesiastical or Divine Law, doth punnish the spirituall soule after this Life in manner aforesaid.

And men also in this Life may designe good works which they cannot effect, and may effect good works which in this Life may bee unregarded and unrewarded. In these Cases the Eclesiasticall and Divine Power doth aleviate and shorten the pains due after this Life for other Sinns, and make a just ballance of all men's accounts of what nature soever.

To make this Ecclesiastical & Divine power effectual, It is necessary as followeth, vizt:

1. That there bee an authority from Heaven, such as "I give unto thee the Keys of the Kingdome of

Heaven," "Whatever thou bindest on Earth shall be bound in Heaven," and "My Kingdome is not of this world" &c.

2. There must bee Sacrament and misterys unintelligible, and beliefe of what is against common sence, as the Doctrine of Transubstantiation. So as all misterys and beleifs easier than those of that Doctrine, may most easily passe and bee admitted; and obedience [may be] easily given to this eclesiasticall and Divine power, of which ready beleif & obedience that very Doctrine is a full proof and experiment.

3. For the exercise of this Spirituall power in manner aforesaid, there must bee a place where souls may bee punnished after Death for their Intentions of sin and for escaping the punishment of secret sins aforementioned, before such souls bee either admitted to eternall rest, or put to Eternall Death.

4. If souls must bee punisht for intended sins and secret sins, after naturall Death, then it is necessary that for discovering and measureing the said sins, there must bee an obligation in the sinner to what is commonly called auricular confession; whereby the spirituall officer may know what to bind and what to loose, and how to use his Keys of the Kingdome of Heaven.

5. To the end that the spirituall officer or Priest, may encourage & draw the greatest sinners to this Confession, It is necessary hee should bee able to use and procure, in behalf of his Penetents, the Intersession and works of supererogation of other meritorious Persons, to lessen the pains and punishments of his Penetents.

6. This Priest must teach his Penetents the Doctrine of free-will and a sufficiency (with the grace of God which hee can furnish by the Sacrament) of all that is necessary to eternall salvation.

Upon the whole matter, this Spirituall power (which is Catholiq and universall throughout the whole World) serves, by its punishments and rewards upon the soule after this Life, to beget locall obedience to particular States and Countrys, in whatsoever the Soveraigne thereof pleases to ordaine. And the same power being perpetuall may serve the temporall Interest of all the World successively; And all this without interfearing with the humane, Carnall and Corporall Interest either of the severall Civitates or their subjects. And moreover that Religion which is furnished with all the divine and spirituall helps and Instruments abovementioned, is the Universall and perpetuall Vicarage to Christ the Sone of God, and hath the Doctrines, powers and misterys of Transubstantiation, Purgatory, Confession, Intersessions and supererrogations of meritorious persons; as also free-will & sufficiency in man to work out his owne salvation—I say that, Religion is onely[1] able, without interfearing of Civill and Spirituall powers, to support and promote what ever the Civill and Temporall authority shall enjoyne.

(*Endorsed.* "How the Civill and Spirituall Power may operate without interfearing.")

No. 41

An Oath of Allegiance & Supremacy (1686)

1. I sweare & believe that there is one God, who made Heaven & Earth.
2. That God was the Father of Adam (by the Dust of the Earth), the first man and monarch of this world.
3. I believe that our Lord James the 2nd is King of Great Brittaine and Ireland, and of severall other Teritorys, by a Title rightfully derivable from Adam.
4. That the Wilfull change of Monarchy into Democracy is Treason.

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[1] *I.e.*, alone.

5. That the like setting up a Supreme [power], other than the King, is treason in all that bore the denomination of that Democracy or Supremacy.

6. That the getting from the King (in Necessity or by the help of foraine Princes) all or any part of his power over his Militia, Revenue, Judicature or Legislature, is also treason.

7. I sweare to obey all Laws made by the Authority of his present Majesty and his Predecessors.

8. I sweare & believe That Jesus of Nazareth is the Christ, the Son of the living God (by the Virgin Mary).

9. That God gave him the Kingdome of Heaven, which was not of this world.

10. That Jesus Christ gave to his servant Peter the keyes of that kingdome, with comission to bee chiefe and universall Pastor of the Soules & Spirits of all men, but with reference to the said Kingdome of Heaven onely.

11. That the present Bishop or Pope of Rome, hath the same Power, but without any authority in bodily, Carnall, Temporall or Civill Concernes; nor in and over any Kingdome of this world.

12. That whosoever (as Vicar of Christ) pretendeth thereunto is Antichrist.

13. And lastly I heartily professe the Catholiq, Apostoliq, & Roman faith, and to worship God according to Law.

So help mee God, and the contents of this Gospell, in Christ Jesus.

(*Endorsed.* "An oath of Allegiance & Supremacy 1686: for the Kings right & Title; for the form of monarchy; for the Kings supremacy; against *laesa majestas*; for obedience to Lawes; for the Bishop or Pope of Rome; against Antichrist; for the Catholiq, Apostoliq, & Roman faith; for the worship of God by Law.")

No. 42

Liberty of Conscience

As to Liberty of Science, Conscience, or beleiving, there is indeed none; the same being the force of reason upon Comon Sense, or Imediate Inspiration from God.

But as to liberty of eternall worship, profession or teaching, wee say:

1. That the Persons desiring liberty, must put themselves into tribes or Classes, by exact declaration, wherein they respectively differ in doctrine or worship from the State Religion; with a protestation that they beleive the said doctrine & worship necessary to the quiet of their Conscience here, and their Eternall Welfare after Death.
2. They must assure the soveraine of their faithfullnesse and obedience to him and the Civill Lawes in all other matters.
3. There must bee a competent Army of such as the soveraine can best trust, wherewith to keep comon peace amongst Dissenters.
4. Upon all which there must bee a mutuall assurance, that such Liberty and Indulgence shall bee perpetuall, or not alterable but upon cleere conditions and long warning.

No. 43

Liberty of Conscience and Worship

There is no liberty of Science, Conscience, or faith, in Nature; Wherefore This phrase signifyes:

1. Liberty from the Impositions even of Soveraigne powers in Divine matters.
2. Liberty (or not to bee byassed by rewards or punishments) in the search of truth in divine matters.

3. Not to bee punishable for any fact as it may be thought contrary to the Scriptures or law of God, but as inconsistent with the peece & welfare of the *Civitas* whereof wee are members.

4. Freedom to dispute, determine, & professe, in Matters relating to God, Angells, God's prophets, Heaven, Hell, the Soule of man, or other matter Infinite, uncomprehensible or Inacesible; so as not to prejudice the peece & Welfare of the State.

5. Liberty to worship God in such places, at such times, by such ministers, with such liturgies, with such habits gestures & ceremonyes, as are not forbidden by the Soverain as prejudiciall to the peece & welfare of the *Civitas*; And which The practisers shall solemly declare That they think necessary for the peace of their Worship now & happines after death.

There bee in truth but 3 Christian Tests of religion, viz:

1. Those who believe that God sent Jesus of Nazareth, his onely son, into the world, to abolish all former worship of God & to introduce a New One, & a New church to bee governd after Jesus by Peter & his successors, in order to spirituall matters.

2. Those who believe The Scriptures do contayne all Christian doctrine necessary to salvation; That the same are but few & plaine, as that Children & Jurists (?) may understand & remember them; and that the soveraine of the place hath power even from God [over] all the externall circumstances of worship.

3. Others think That God has left every man to his owne conduct in matters of faith & worship, & requires no Obedience but to the Magistrate, unto whom hee [has] given the power over our lives, limbs, libertyes & livelyhoods, as his onely representative on earth.

If any soverain require oathes concerning their subjects' faith & Divine Matters, There is a danger That They force the people to sweare what they do not believe or cannot know; to the weakning of Oathes in other necessary cases, even of fidelity to their schooles (?) & testimony between one another.

The most thoughtfull men, & consequently the most skilfull & Industrious part of mankind, do love the Liberty above described, & chuse to live where they may securely have it; & having no feare of loosing their liberty of person & property of goods for their Judgement, nor of being forced to do what they believe will hinder their Eternall Welfare, they are successfull in their respective callings. In so much as 2 men thus qualifyed will perform as much labor & art as any 3 otherwise affectd. So as the Liberty of Worship encreases the effect of the Soverain's Subjects from 2 to 3 or thereabouts—which is put to bee noted.

No. 44

Fees for the Parson of Every Parish

(*A*) for Temporalities; amounting per Estimat to 45*l* per annum.

1. Hee being to bee publiq notary, master of Chancery, & register of the Parish may reasonably have:

1. For setting his seale as witnesse to any deed—6 pence.
2. For making any Deed, Lease, Will &c, if it bee desired, as much as others now have.
3. For Entring the Docket of any Deed, and endorsing the same, with the page of his register—6*d*.
4. For taking an oath & serving a subpoena, and certifying the same under his seale—12*d*.
5. For being Clerke to Commissions out of Chancery—6*d*, for every hower of his attendance.

2. Hee, being to bee Postmaster between his owne

Howse, and the 2 next stages on each side of the same, may bee supposed to gayne thereby, for the maintenance of a servant about 4*l* per annum.

3. Hee, being to bee overseer of all small schooles, sellers of drink, midwives & physic-practisers (to bee all chosen by the parish), may have by the same per estimat 40 shillings per annum.

4. Hee, being to bee Accomptant of the Lands & hands of his Parish, may have for the same, vizt:

> 1. For every acre of Land within the Bounds of his Parish (which, and every mans holding, hee is to preserve by the Chayne and meridian)—one farthing in Ireland and a half penny in England; with an account of Births, Burialls, mariages, ages, Religion, Trades, Titles, offices & nations of the people.
> 2. For every acre under Corne & hay & orchard, which hee is yearly to measure—one penny.
> 3. For reckoning the Cattle, vizt: Cowes & horses—one half penny for each per annum, and the same for every 5 hogs, sheep or goates.
> 4. For all grayne caryed to market, one penny per quarter.
> 5. For wooll—one penny per cent weight.
> 6. For marking the familyes that go out of & come in to the Parish—two pence each, & for keeping the said Accompts 5*l* per annum.
> 7. For reading the State sermons every week 5*l* per annum.

(*B*) Fees to bee paid to the Parson of every Parish vizt: for Spiritualities:

	l.	*s.*	*d.*
1. For every baptisme	0	1	0
2. For thanksgiving after child birth ..	0	0	8
3. For a burial	0	1	4
4. For a marriage	0	2	6
5. For 3 Communions per annum for each person of above 16 yeares old	0	0	9

	l.	*s.*	*d.*
6. For catechising all children of between 8 & 16 yeares old, vizt: for Instructing them in the Lawes of God & the State per annum	0	1	0
7. For visitation of the sick, supposed to bee 8 times the number which dye, at 12*d.* each time (supposed to bee 3 times for those who dye)	0	1	0
Benevolence from the rich of 200 families, per estimat per annum	3	0	0
Estimated in all to bee per annum, in a Parish of 200 families	65	0	0
Abstract			
The Temporality Fees per annum	45	0	0
The Spiritualityes	65	0	0
In all per annum	£110	0	0

The medium being 110*l* per annum, The extreames may bee 60 & 160*l*; vizt: 50*l* per annum below, and 50*l* above the said medium.

(*Endorsed.* " An estimat of the Spirituall and of the Temporall fees & proffits for each Parish.")

No. 45

A MANUAL OF RELIGION AND THEOLOGY (1687)

1. Of the Incomprehensible Being.
2. Of the World within the Orb of the fixed stars, and the soule thereof.
3. Of the Globe of the Earth and Its Soule.
4. Of Devills & Angells, spirits, and witches.
5. Of the Soule of man & brutes.

6. Of Eternall Joyes & torments, as also of temporall purgatory paynes.
7. Of Originall Sin & Redemption, as also the holy Ghost and the sin against it.
8. Of the Lawes of God, Nature, of all nations, & of particular Countries.
9. Of Moses, the prophets & Leviticall law.
10. Of Jesus, his apostles, Gospell & Church.
11. Of Mahomet & his Alcoran.
12. Of the Divinity, Consception, Resurection, Returne, & other misteryes of Jesus Christ, and of his Virgin Mother.
13. Of transsubstantiating bred into his body, soule, & Godhead.
14. Of Invocking the Ghost of dead men for help.
15. Of Whorshipping God in, by, & through Images.
16. Of the Catholiq, Apostoliq, and Roman faith.
17. Of double Supremacy, viz: Civill & Spirituall, domestic & forain, universall & particular.
18. Of the Holy Scriptures, & of statutes, of sins, offences & Crimes.
19. Of Faith, Conscience, Reason, & the liberty thereof.
20. Of an universall unity of Civill Governement.
21. Of the heyre of Adam's successor of Christ.
22. Of peopling the World from the begining of history, and conjectures about the same beefore.
23. The History of Religions & the present state thereof, throughout all the world.
24. Of all the practised formes of Civill Governements.
25. And their Respective durations & atchievements.
26. Of the ten chief Conquerors mentioned in history.
27. Of Plato, Pythagoras, Epicurus & Confusius.
28. Of Druides, Brachmas, Bongi, Dervis.[1]
29. Jewish and Christian Priests; their ordination,

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[1] Brahmas, Bongos, Dervishes.

powers, uses. Why the Sun and Planets were taken for Gods; and why Bacchus, Ceres, Venus, Vulcan, Neptune, Pluto, Aeolus, Diana, Apollo & Minerva were taken for deities, and the meaning thereof.

30. Of the Apotheosis of Jupiter, and other heros in severall Countries and ages of the World.

31. Of Socinians, Deists & Atheists; as also of Enthusiasts, Roman Catholiqs, Civill Christians & State religionaries.

God save the King.

(*Endorsed.* "Religion in 31 chapters 1687.")

VI

DICTIONARY

(46) The Dictionary of Sensible Words—(47) A Dialogue between A and B—(48) The Explication of twelve Theological Words.

DICTIONARY

THE first English Dictionary was published by Cockeram in 1623. It was followed in 1656 by one by Blount, and in 1658 by another by Philips. These compilations were however little more than vocabularies or lists of words. In the eighteenth century the work was carried a stage farther by Bailey, whose Dictionary, compiled in 1721, served as a basis for that which 'the great lexicographer' produced in 1755.

Petty, as his writings show, had a passion for definitions, imbibed perhaps through his early associations with Hobbes, and he conceived the idea of making a 'Dictionary' on his own account.

In No. 46, *The Dictionary of Sensible Words* (written in 1685) we find the scheme for this work, with a hundred words tentatively suggested for 'translation.' The Paper which follows it (No. 47) deals with some of these in the form of a *Dialogue*, wherein A and B discuss their meanings by way of question and answer. Some of Petty's definitions (as, for instance, that of 'memory' as 'decaying sense') bear unmistakable evidence of Hobbes' influence, and may be compared with those given in *Leviathan* (Part I "Of Man").

In the following year, with the recrudescence of religious controversies under James II, Petty turned his attention more particularly to words involved in the questions at issue. "When anybody," he writes to Southwell, "would have you to be a Roman Catholic, a Papist, a Protestant, a Church of England man, a Presbyterian, Anabaptist, Quaker, Fanatick, or even a Whig or Tory, let them quit all these gibberish denominations and uncertain phrases, but make you a list of *credenda* and *agenda* necessary for your Eternal happiness, and give you their reasons for the same. This being done, let them give you a clear & sensible explanation of these words: God, Omnipotent, Soul of Man, Soul of Beast, Church, Christian, Pope, Spiritual, Substance, Scriptures, Reason and Sense. For without these words you cannot touch these matters—much less ever come unto any conclusion" (*Corr.*, April 1686). Southwell, ever on the side of caution, betrayed some anxiety at the prospect of his friend embarking on such dangerous topics, and as a 'sawcy friend' advised Petty to let him have the first sight of anything he might write on the subject. Hence the *Twelve Theological Words* (No. 48) which, as the Correspondence indicates, was written in that year and sent by Petty to Southwell soon afterwards.

The project, like many others which originated in Petty's fertile brain, remained abortive. It is referred to in one of his last letters to Southwell: "The Dictionary I have often mentioned was intended to translate all words used in argument and important matters into words that are *signa rerum et motuum*" (*Corr.*, 24th November 1687). But three weeks later Petty had breathed his last.

No. 46

THE DICTIONARY OF SENSIBLE WORDS (1685)

A Dictionary shewing what sensible Matter, Thing, Motion or Action, every word therein doth meane and signify.

What words have the same meaning.
What words have many meanings.
What have none at all.
What words are the names of other words.
What words are the ligaments of other words into speech.
What words are ornament, sportful and brillan[t] (?).
What words do consignify.
What are auxiliary.
What verbs are substantive.
What substantives are verball.
Words which by having too many meanings have none.[1]

God
Devill
Angell
World
Heaven
Hell
Soule
Spirit
Religion

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[1] Cf. *Leviathan*, chap. v.

Church
Christian
Catholic
Pope
King
Oath
Common Law
Custome
Statute
Equity
Record
Aula
Curia
Chancery
Prerogative
Priviledge
Parliament
Peere
Comes
Baron
Esquire
Gentleman
Yeoman
Conscience
Liberty
Property
Opinion
Faith
Judgment
Reason
Authority
Consell
Truth
Justice
Good
Beauty
Courage
Sacrament
Holy
Honour
Worship
The Bible
Handsome
Much
Nature
Art
Mony
Protestant
Fanatic
Peace
Rich
Covetous
Provd
Vertue
Imprisonment
Priesthood
Feeling
Treason
Wise
Bishop
Priest
Deacon
Person
Citty
Altum Mare
Admiralty
Possession
Grace
Content
Ornament
Wrong
Damage
Frawd
Trusts
Power
Covenant
Heresy
Schisme
Nation
Heyre
Kinred
Pleasure
Ridiculous
Chance
Wit
Judgment
Fancy
Martyr
Testimony
Praise
Duty
100

Whig
Tory
Trim[m]er
Moses
Mahomet
Gentile
Idolatry.

No. 47

A DIALOGUE BETWEEN A AND B

A. What art thou?

B. A Man.

A. What's a Man?

B. Such a thing as I am.

A. What's that?

B. I don't know.

A. Then you don't know yourselfe; whereas the Philosopher sayth "Nosce teipsum."

B. If I knew myselfe, I believe I should thereby know most other Animalls that are lesse complicated than myselfe. Pray teach mee to know myselfe.

A. Of what doth men consist?

B. Of flesh and blood.

A. You must say of Soule and Body.

B. Of Soule and Body.

A. Who made them?

B. To be sure not himselfe, because hee understands little of himselfe, and very little of generation, though men love it so much. But it was that Power wee call God.

A. What is God?

B. The Contriver and Maker of the whole World and all that is in it, of which man is a principall piece.

A. What is the World?

B. All that is contaynd within the convex Sphere of the fixd Stars, not considering any thing without or beyond that Sphere.

A. Why do you think that one power made all things within the Sphere, [rather] then that one power made the Sun, another the globe of the Earth, and another made Man?

B. No, for then I must say that some common Power made all these three; whereas without needlesse multiplication of powers it is more convenient to say that one power made the Sun, Earth, Moon, than that three powers made them, and that one other power made all these three.

A. How do you describe God more than that he is the Contriver and maker of the whole world and of all things within it?

B. If *quiquid efficit tale* bee *major tale,* then God who made all things is more strong, hath more sense and reason and knowledge than any other thing, and consequently can do all that is possible, and know all that is knowledge; and this I take to be a better description of his power than 'Omnipotent' and 'Omniscient,' &c.

A. Wherefore did God make the World?

B. Tell me wherefore Hee made the fixed stars and stuffed this Globe of the Earth (as we think) for 8000 miles through with such matter as we finde within one mile of its surface. I say I cannot tell, nor need to know.

A. When did hee make it?

B. Either the world was from Eternity and is God itself, or else God created it sometime or other since.

A. When?

B. If mankind bee as old as the rest of the world, it cannot have been made longer than the time wherein one paire of mankind breeding might have multiplied themselves to the number we find now upon the surface of earth, which is between 3 and 4 hundred millions. Which agreeth with what Moses relateth thereof.

A. Let us return to Man. You said he consisted of Soule and Body. What is the Soule?

B. Some say it beareth the same analogy and semblance to the body as the thin blew flame of burnt wine beares to the bulk of the wine itself. Some say it beares the same analogy to the body as the motion of the weights of a clock doth beare to the whole clock-work. Others say it is *totum in toto corpore* and *totum in qualibet parte corporis.* Others say 'tis

Entelechia.[1] All say it is eternal and immortell; that is to say some say it is immortell *ex natura rei*, but that God in vengeance will annihilate the soules of some men. Others that the soule is mortell *ex natura rei*, but that God by his grace and favor will make the soules of some men to bee immortell and never to have an end. They say also (men of the Church) that the soules of men, separate from the body, are capable of great pleasures and friends.

A. What is the Church you mention?

B. An Assembly or Councill of Mankind, in order to make men's soules eternally happy after death or separation from the body; as a *Civitas* or State is the like Councill, but in order onely to procure peace and plenty to body and soule before death. And tho there bee many *civitates* and states on the face of the earth, yet meethinks there ought to bee but one Church. Nor do I see why a thousand states may not consist with the beeing but of one Church, for as much as the Church meddles not with any thing but rewards and punishments of the soule after naturell death and not before.

A. What do you call Religion?

B. Laws, rules, and methods agreed upon by the Church for making the soule eternally happy after naturall death. Among which rules the chief are those which relate to the worship, honor and service of God in this life, in order to happiness after it.

A. It is a hard matter for all mankind to meet and agree upon such rules, and harder that men should [be] eternally miserable without them.

B. It is so. Therefore God hath written a law in the heart of every man which sheweth the meanes, and permitted particular assemblies, even of 2 or 3, meeting together in his name to serve for the rest.

A. What is Sense?

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[1] This word as used by Aristotle signified the complete expression of some function. It seems here intended to convey the idea that the 'Soul' was something complete in itself.

B. It is a discerning of differences of all things by our eyes, eares, nose, pallat and skin.[1]

A. What is Faith?

B. It is our making use of the senses of others insted of our owne, and acting accordingly; whereas many take faith to bee an admission of propositions that we do not understand, even such as are not at all understandable to bee true or false, tho contrary to sense.

A. What is Reason?

B. Nothing but the addition and substraction of *Sensata*, or notions known by the senses; which all animalls do practice, tho not [with] the same advantages of speech as Man doth.

A. What do you call Speech?

B. Sounds articulate called Words, composable out of lesser sounds called Letters; by which words all things, qualities, sensations, and thoughts may bee represented to the mind by the eare; as if the eyes, nose &c. had originally represented the same.[2] And the other animalls besides Man have [it] not, but in a very low degree, in what concerns their food sleep and lust.

A. Now you are about it, tell me wherein Man differs from all other Animalls. I will not trouble you to tell wherein hee differs from each animall, within the *Scale of Creatures*[3] which I have heard you sometimes mention.

B. (1) A man hath speech which exceedingly advantageth his reason.

(2) Man only consulteth about eternall happiness after death.

(3) Man only enquires into the next causes of effects, and into the causes of these causes, and so forwards (to the 3rd, 4th, 5th, &c. causes) according to the strength and reach of his imagination; and

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[1] Cf. *Leviathan*, chap. i.

[2] *Ibid.*, chap. iv.

[3] *Cf.* No. 87 *infra.*

careth not only for his daily food, sleep, lust &c, but for and untill the end of his life and also for many generations to come; and will expose himself to the danger of present death and wounds for these remote matters.

(4) A man doth differ from all other animals in use of the female, and generation. By using the same without designe or desire of generation, and when generation is needlesse or impossible. In making such rules and lawes concerning the same, as no other animall doth; and all this while making all the acts and instruments thereof ridiculous, shamefull, and filthy, so as not to bee seen or spoken of in the company and presence of [others without ?] laughter.

A. From all you have said of Man, I do not find him more excellent than all other animalls.

B. Not perhaps from what I have hitherto said, for his speech, religion, sollicitude for the future, and dogmas about generation may be very uneasy to him. But there be other considerations which make him superior to any other animall, tho particulars exceed him in severall points.

A. Pray in what?

B. Let it alone till another time.

A. What do you mean by Memory?

B. Dying and decaying sense[1]—a good memory being like the Pendulum which upon one impulse maketh many vibrations before the motion dye.

A. What d'ye meane by Intellect?

B. Knowledge compassed out [of] all or many of the senses or sensations together.

A. What by Will?

B. Will is the last act of deliberation *rebus agendis*, as Judgement is *artis ultimis opinentis*. Opinion being a guesse where a volutation (?) will rest, before it resteth.

A. What is Conscience?

B. It is taken for Judgement concerning Religion and the Soule. Tho it properly means an Internall knowledge within oneself, without the help or force of externall testimonyes.

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[1] *Leviathan*, chap. ii.

A. What d'y meane by Law?

B. The Agreement of the people in their representatives.

A. What by Custom?

B. The Common unpunished practice of the People during the life of the oldest man alive, or the oldest authentic record.

A. What is Possession?

B. An actual power to use and enjoy.

A. What is Right?

B. The guage for same.

A. What is Action?

B. Motion visible or invisible, sensible or insensible.

A. What is Motion?

B. Change of Place.

A. What is Place?

B. I know no word better, nor as good.

A. What is Time?

B. Measure and order of motion.

A. What is Number?

B. The name of magnitude.

A. What is Thinking and consideration?

B. The comparing and matching of *sensata*.

A. What d'y meane by Good Parts?

B. Good memory and nimble thought.

A. What by Truth?

B. The Agreement of Things with the words which [are] agreed to signify and represent them.[1]

A. What by Wit?

B. Confusion of representing things like, and by judiciousness the nice difference of things seeming to be like.

A. What by Ridiculous?

B. The likenes of things very valuable to others as contemptible, and the disproportion between things proposed as equall.

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[1] *Leviathan*, chap. iv.

A. What are the formes and species of a Civitas?

B. There can be but 3: viz. (1) Where one yourself (?) (2) where all naturally able (3) or a select number between both.

A. What is Treason?

B. Jus leesa Majestas, or endeavour to hurt the supremacy settled; because unsettlement or change is not usually made without much slaughter, spoil, and persecution, and the hurt of many that would be quiet.

A. What is Rebellion?

B. Raising a new war after conquest in a former, upon the same questions, and after submission to the conqueror. And [it] is very punishable upon the grounds last mentioned.

A. Why is Treason and Rebellion so much to be avoided by particular men?

B. For many reasons viz:

> (1) Because the benefit which any one man is like to make by the change in formes of government is very small (considering that all formes turne into a flunketty oligarchy), and not proportionable to the danger of losing his owne life or estate in the contest.
>
> (2) Though the whole party of rebells, consisting suppose of 10000, it is question whether the particular man shall not repay (?) life and estate notwithstanding.
>
> (3) Because these matters are not determined by right [and] reason, but by violence and chance.
>
> (4) Because changes are not made with 100 times more reason to many then the benefit can bee to one.
>
> (5) In plots and conspiracies 'twill [be] 100 to one that any of them taken for the conspirators must bee bad, poore, unliking, and revengefull men, Whereof the worst shall destroy the best. And 10

wretched rascalls shall be pardoned for the (perhaps perjuring) accusation of one man of courage resolution and wealth.

A. What d'y meane by Nature?

B. The Method of God in his works.

A. What by the Holy Gospels?

B. Books of severall authors, allowd by the severall soveraine powers owning: (1) That the history contaynd in the said books are true (2) That the doctrines are not contrary to the will of God (3) That the actions done by men praised in the said books are fitt to be imitated, and contrariwise (4) That the mysteries and untelligible matters contaynd in the said books are not be contemned, vilifyed or derided (5) The seeming contradictions are not to be rashly condemned (6) That the doubtful parts of them ought to bee interpreted by the Sovereign Power and civil laws of the place (7) That whosoever declares any opinion to the Contrary hereof, shall give security to the government. That such opinions shall not hurt the public peace.

A. What is meant by Liberty of Conscience?

B. Not insisting for [his] own opinion, because 'tis in no man's power to opine what he pleases, nor need any man to tell his opinions: not punishing of words or deeds contrary to the knowne civil laws of the government [or in] breach of any liberty. But Liberty of conscience is to do and practise with impunity in this world even what the church declares will be punished upon the soule after death.

A. What is Sovereign Power?

B. Power to take away the lives, limbs, libertyes, and estates of any represented in it.

A. What is War?

B. The fighting of Sovereign powers.

A. What is Duell?

B. The fighting to death the subjects of the same soveraigne power and declining the [use] of the Law.

A. What is the Law of Nations?

B. What all sovereign powers do agree in and declare themselves bound by.

A. What may bee the garanty between 2 sovereign powers?

B. So may other soveraigne powers, as are greater than either of the contending soverains, inde the garats.[1]

A. What is a Record against which there is no sueing?

B. A judgement made upon hearing both parties, solemnly debated at an appointed time and place, or by other authority kept by sworn and uninterested persons.

A. What is Prison?

B. The securing a suspected person's being brought to answer his accusation.

A. What else?

B. A meanes to prevent the future doing of crimes.

A. What else?

B. Punishment for errors past.

A. What is meant by Baile and Mainprise?

B. When one under a penalty Mulcted doth undertake to catch and give up another to answer unto what he is accused of. But no baile is taken for crimes which require death and for which the prize is pregnant (?).

A. What d'y mean by a Roman Catholiq?

B. The Religion which was generally embraced throughout the Roman Empire, about the time of first Christian Roman Emperor.

A. What is meant by Christian?

B. One believing the Apostles Creed, or, professing to believe it, baptized into it.

A. What by the Protestant Religion?

B. A non-Papist religion protesting against the universall authority of the Bishop of Rome over all Christians.

A. What is meant by the Church of England?

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[1] *Sic*, perhaps this should read 'hinder the guarantors.'

B. A Christian governed by the soverain authority of England; whether the same bee the King alone, or the King and parliament of England.

A. Who are the representatives of the Church of England?

B. The King and Parliament, by the advice of the 26 Bishops and the Convocation House, or without them.

A. Is the King or Queen of England head of the Church of England?

B. He is the chief of that Church, but is no priest, much less a Bishop. Neither can he make Priest or Bishop, but can when they are made, so appoint in what places of his Kingdome they shall exercise their function.

A. What is the High Court of Chancery?

B. A Court which exacteth evidence from the party impleaded, causeth absent witnesses to be examined by what Courts hee pleaseth, and imprisoneth the persons and sequesters the estate of those who do not obey that court, and giveth injunctions to all other courts not to take cognisance of the cases which hee hath a mind to attacke.

A. What is a Jury?

B. Twelve men sworne to try the issue between the plaintiffe and defendant named unto them: viz. to try the matter of fact, and thereupon (the Judges desiring) in matter of Law (if they believe the Judges opinion thereon) to find in generall for the plaintiffe or defendant, or bring in a speciall verdict concerning the fact onely, leaving the law to all the Judges.

A. What is meant by a Fanatiq?

B. One who is a *fanum* or oracle to himself, relying in matters of religion upon his owne reason, spirit, light and judgement.

A. What a Pagan?

B. A feigned man or the vizard of a man.

A. What is Honor?

B. Acknowledgment of power.

A. What is Worship of God?

B. To ask of him what no man can give us: weather, health, victory &c.

A. What is Holy?

B. God, apart from worship of God.

A. What is Heresy?

B. Private or singular opinion.

A. What Schism?

B. Breaking company for difference of opinion.

A. What is Marriage?

B. A vow to want no other woman than her wee marry during life of each other, in no case.

A. What is Murder?

B. Private homicide upon designe.

A. What is Pride?

B. An opinion [that] wee can do more than wee can, with expectation of honour accordingly.

A. What is Covetousness?

B. A desire of more than wee want, with wrong to others.

A. What Happiness?

B. Obtaining our successive desires.

A. What Prudence?

B. The foresight of effects in their cases.

A. What Wisdom?

B. Not to say or do but by which we may get as much as loose by not saying or doing.

A. What is Folly?

B. To stake odds on a future contingency.

(*Endorsed.* "Dictionary.")

No. 48

The Explication of 12 Theological Words

God is the designer and maker of the orbe of the fixd stars, and of all things contaynd within the same.

Which orb is the visible world and the greatest body; whereas the least body is the smallest atome that can bee seen by Man. One of which atomes is an unite, and so many of these atomes as will make the world, is the greatest number considerable.[1]

Omnipotent is [one] who can do all things possible: vizt: make the sun and stars stand still, or take different motions and courses; dry up the sea, stop its ebbing and flowing; beget a new species of men [or] animalls, or new senses in those that are; alter the way of generation in animalls, vegetables and mineralls; and do all or any of these things at times prefixed. As also who can and doth heare the prayers of all men, grant their requests, and make them for ever happy or miserable.

The Soule of man is something that can subsist without his body, capable of everlasting weale and woe, invisible to the eyes of men, that approacheth the existence and omnipotence of God, and thinks it a duty to serve and worship God, studyes the dependence of all things upon prior causes, even up to God, the first of all the causes of all things.

The Soule of brutes is also a body very fine and subtill, so as to bee invisible to the eyes of man; perishing with the organicall body of which it is the soule and life; taking no notice of God or prior causes, nor of mortal beeings between God and man (called Angells); nor capable of speech whereby to communicate their sensations and conceptions to man.

The Church is a number of men consulting how to preserve the everlasting welfare [of] their soules and the favor of God, by prayers, worship, service, and the good one of another, in this life and after death.

Christians are such of these consulters as believe that Jesus of Nazareth, born at Bethlehem 1689 yeares ago, is the Christ or the anointd onely and peculiar Son of God; sent then into the world for the good of all Mankind, which he proved by his owne death, resurrection, and ascension to his father, and who shall bee the judge at the End of all earthly powers, of all men that ever livd.

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[1] *Cf.* No. 90 *infra.*

The Pope is a person who saith that God gave to Jesus his Son, all power in heaven and earth. That Jesus gave the same to Peter (one of his servants) and to all that Peter should appoint to succeede him therein. That the sea [*sic*] of the Pope is the Citty of Rome in Italy, built about —— yeares before the birth of Jesus. That the Pope is to bee chosen by 70 men, called Cardinalls, made so by some former Pope. That this Pope is Jesus his universall and perpetuall Vicar, the generall director of the worship of God. That all Kings are his ministers and executors of his decrees. That hee onely can appoint bishops his substitutes, and that such Bishops onely can make Priests, and that Priests onely can officiate in the direct service and worship of God.

This Pope's principall doctrines are:

1. That the body of Jesus may be created by a Priest, as also the soule of man and the entire Deity, and may be whole in infinite places at once.

2. That such soules of dead men as hee, the Pope, declares saints, do know in heaven all that is done on earth. That the prayers of these saints are in most cases more beneficiall to man than direct prayers to God.

3. That there is a place wherein the soules of men may bee tormented from the time of death till the day of Judgement aforementioned, but may be easd by Priests and the merits of other soules.

4. That the Images and Reliques of God, Christ, and his Mother, and all other declared saints may be worshiped.

5. That the Church are those [who] follow the Pope only in *credendis et agendis*.

6. That no man's soule can be happy after death,

but such as owne his aforementioned authority, and dy in the beliefe of the premises.

7. And lastly who embrace all the articles of the Councill of Trent that sate Anno ——.

Faith is believing upon the sensation of others, expressed by such words as are the signes of Things and is therefore calld "The Evidence of things not seene." The knowledge argued by Faith is no more voluntary then that which is begotten directly from our owne senses. Nor can wee believe what wee please, nor what wee do not understand, no more then wee can believe a white object to bee black tho we desired it. Nor can wee believe that chymeras do bombinate[1] (tho the greatest man in the world should tell us so), because these words are not the signes of things.

Reason is onely the addition [or] substraction of *Sensata*; like the composition of printer's letters, whereby out of a few characters infinite descriptions are made, and as out of generall elements infinite Theorems are deduced.[2]

Spirits are the soules of men with reference [to] God, without confederation of their body, and therefore considerable onely after naturall death. And the power and authority which concernes Spirits is a Kingdom not of this world, such as Christ's Kingdome was. So as matters spirituall is onely what concerns soules after this life, and chiefly their weale or woe between death and the day of Judgement; after which follows either eternall life or eternall death.

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[1] In the list of books which Pantagruel found when he went to Paris (Rabelais, *Pantagruel*, livre ii, c. 7) was one: *Quaestio subtitissimus utrum Chimaera bombinans in vacuo possit comedere secundas intentiones, et fuit debatata per decem hebdomades in concilio Constantiensi.*

This nonsensical question thus came to be ascribed to the schoolmen, and is in that sense here referred to by Petty.

[2] *Leviathan*, chap. v.

Substance is onely another word or name for Body, Matter or thing, which we call substance when wee would consider the accidents and qualities which it may support; as wee call a Rope a line when wee use it as a measure, but not when a Rope is the harnesse of a wagon or tackling of a ship.

The Holy Scriptures are certain Bookes intended onely for the direction of Soules to their eternal welfare—

(1) the matter or history whereof is true or understandable.

(2) The doctrines whereof are to be embraced.

(3) The examples proved therein are to bee followed.

(4) Authorised by such to whom God hath committed the care of men's soules; but every word in them was not properly spoken by God, but by God's appointment.

VII

STATISTICAL

(49) Registrar General of People, Plantations, and Trade of England—(50) The uses of Sir William Petty's book—(51) The Method of Enquiring into the State of any Country—(52) Accountant General of Lands and Hands—(53) A Gross Estimate of the Wealth of England—(54) Of a Poll Bill—(55) The Application of the Five Books to the King's Revenue—(56) Materials for a new History of Life and Death—(57) In Merchandise—(58) Of Lands and Hands—(59) Mercurius Londinensis.

STATISTICAL

I HAVE dealt elsewhere (Introduction, xxvii-xxx) with Petty's right to rank as the pioneer or inventor of the Science of Statistics. Almost all his writings, published and unpublished, show that argument by the statistical method, or, as he expressed it, in terms of "number, weight, & measure," amounted with him almost to a passion (*cf.* Preface to the *Political Arithmetic*, Hull, 244). It was his misfortune and not his fault that the groundwork for such argument was in his time practically non-existent. But this in no wise deterred him. He took such facts and figures as were known, or could be roughly estimated, and built up upon them his deductions and sometimes a series of further estimates. The foundations being necessarily slender, Petty's superstructure was often insecure, but he lets it be seen that he was alive to this fact and he never ceased striving to obtain more reliable data. The Papers printed in this section are evidence of his efforts in this direction, and show that he had a clear idea of what was wanted and how it was to be obtained.

No. 49 is from a MS. in Aubrey's hand at Oxford (*Aubrey MSS., No.* 26). It is dated 1671 and shows that at that time he was being urged by Petty to get himself appointed Registrar-General of the "People, Plantations & Trade of England."

When sending No. 50 (*The uses of Sir William Petty's book*) to Southwell Petty remarks "our Lord Lieutenant [the Duke of Ormond] accepted its design kindly from me, and said the book should be forthwith made; but I hear no more of it" (*Corr.*, 3rd May 1679)—and no more was to be heard of such schemes for many a long day.

No. 51 is Petty's plan for *enquiring into the state of any Country*. The statistics he suggests cover a wide range—from Cattle prices to medicines, and include even the 'best sellers' of the day. If the classification of his desiderata is somewhat haphazard, it is interesting nevertheless to note the undercurrent of his thoughts, as for instance when he branches off from 'tides & currents' to 'royal favourites' and the special idiosyncrasies of the Sovereign.

In No. 52, *Accountant General of Lands & Hands*, we find once more the same idea, but there is no mention of Aubrey, and Petty when he wrote it was presumably contemplating himself as the 'King's Accountant.' In the form 'for a Bill for 10 Parishes' which follows this paper, we can see in detail the statistics which it was his object to collect for the purpose of his Registry.

No. 53 is a revised version of Petty's *Verbum Sapienti*, chapter I. That pamphlet, as pointed out by Hull, was probably written in 1665—*The Gross estimate of the Wealth of England* just 20 years later. There is thus an increase in values all round, and the 'value per head' of the population, an item on which Petty set great store, is brought out at a higher figure (£83) than in any other of his papers.

Of a Poll Bill, 1685 (No. 54), is, in fact, a scheme for a census of the population by classes, from each one of which its due quota of the Poll Tax was to be exacted.

No. 55 is more ambitious. It is a plan for the compilation of five statistical books (dealing respectively with Lands, People, Merchandise, Revenue, and miscellaneous matters) in order to ascertain the Revenue derivable from each source.

The title of No. 56, *A new History of Life & Death*, is borrowed from Bacon. The paper gives an outline of the requirements for the compilation of vital statistics.

No. 57, *In Merchandize*, is an interesting attempt to analyse the proportions due to the raw material, manufacture, carriage, and taxation in the price of various commodities.

No. 58, *Of Lands & Hands*, shows the purpose for which Petty desired the various figures which are postulated elsewhere, and the nature of the deductions which he intended to extract from them. This paper is as good an exposition of his statistical method as is anywhere to be found.

No. 59 has no heading but is endorsed *Mercurius Londinensis*. It is evidently a scheme for an 'intelligencer' or gazette by means of which the general statistics of the country might be kept up to date—to be published weekly, monthly, quarterly, and yearly. It was to be accompanied by *Observations*—as well as by an Almanac, and by a map with a description of the city.

No. 49

REGISTER GENERALL OF PEOPLE, PLANTATIONS, & TRADE OF ENGLAND. (*Aubrey MSS., No.* 26)

Direction from Sir William Petty to me heretofore (*sc.* 1671).

To gett an Office for such a Registrie, for the collecting the Accounts of the severall particulars following, viz:

1. Of all the Births, Mariages, Buarialls throughout all England: and to see them duly kept: that his Majesty may have a yearly account of the encrease and decrease of his Subjects.
2. An account of the Herths, and Houses in England: as also of the People, by their Age, Sex, Trade, Titles, and Office.
3. An account of the Trade is to be deduced from the Customs house Bills, and Prices currant (upon the Exchange).
4. A particular account of the Excise, according to the least collections of sub-farmes.
5. An account of the severall Payments that have been made by Land-taxes, Polls, Subsidies, Benevolences, and particular Imposts.
6. An account of all the Church Revenues.
7. A *Villare Anglicanum*, sc. an account of all the Cities, Townes, Villages, great Houses, Rodes, carriages, principal Innes, and Families of England, with the Post-stages of the same.
8. An account of all the Scholars in the Universities, and publique Schooles.
9. An account of all the Prisoners from time to time, and of all Executions.
10. A particular account of the Shipping of England, and all Foraigne ports, and the Seamen resident in each Port.
11. The Prices currant of the principall Commodities in each Market of England.

12. The true number of Irish Cattle imported.

13. The number of Attorneys in each Countie: now, and what heretofore, *e.g.* Sir Giles Strangwas remembred but —— Attorneys in Dorset, and now there be three-score or more (*quod* N.B.).

This Designe is to have Abstracts of all the above particulars in order to compare them one with another, so as to give the King a true State of the Nation at all times.

Be at Sir Leoline Jenkins to gett a Patent to authorize me to use all laufull waies and meanes to procure accounts of the premisses, and that all the Kings Officers be assistant to me therein gratis. (Sir Wm. Petty hath promised me, to assist me in it.)

Take an account of the number of Weavers in London.

A Register Generall, of people, and Plantations and Trade of England.

Mr. Michael Weekes of the Custome-house, might easily make a most usefull Booke of Observation on the Custome-house bills, as, Sir W. Petty hath donne of the Bills of Mortality.

No. 50

THE USES OF THE BOOKE MENTION'D BY W.P. (1679) are as followeth: vizt:

1. To know the number of families in each walld or Corporate Town and Burrough, which hath many uses.

2. To estimate the numbers of the whole people in general, and of the English, Scotch, & Irish in particular.

3. To see whether the old division of Parishes doth answer the present Cohabitation of the people; soe as noe parish may have lesse than 600, nor more than 1000 souls.

4. It would also serve for the more equally dividing the Country into dioceses, Deanerys & countyes, which are strangely unequall, the true reasons of their antient divisions being now worn away.

5. It will (with the help of a mapp fitted to that purpose) shew how the whole nation & all its parishes are planted and peopled, vizt: which are thick and which are thin peopled; which places abound with protestants, Scotts or Papists, or otherwise; and how the great names and septs are disposed of.

6. It sheweth the value & progresse of Buildings and emprovements.

7. It directeth how to order post-stages, Inns, the places of ffaires, Marketts, and Parliament Burroughs.

8. It shewes what number of acres are fitt to bee applyed to the bearing of each sort of grain, and hay, hemp & flax, & consequently how many, and which, to breeding and feeding of each sort of cattle.

9. It sheweth the most convenient places of Rendeveuz, and meetings of the country, upon any occasion of peace or warr.

10. It is the best rule for Quartering & victualling of armies, whether they stand or march.

11. It shewes what manufactures & Trades can & cannot bee maintained or introduced.

12. It shews the proportions of the Rich to the Poor, or between those who live in houses of 3 Chiminies or lesse, and those who live in houses of above that number.

13. It is the exact measure & Rule of any Tax by the Pole or family.

14. It is the best Rule for Sumptuory Lawes, in times of Scarcity and Dearth; and for Stores, Graneries and Exportations, in the time of Plenty.

15. It affords a way to Lessen the charge of Collecting the Excise to one Quarter of what it is at present.

16. It is a Rule whereby to know the value of Holydayes, and for the Regular employing of all hands in the Nation; for the absolute preventing of

beggars and thieves, & for discovering of Forgers &c.

17. It serves to measure the increase and decrease of wealth, people, & Trade.

18. Uppon Landing of an enemy it gives dirrecteons whether or no, and how, to wast or burn the country; how to dispose of women & children, as also of fighting men, to the best advantage without confusion; how to hinder any enemy of Provisions and to furnish friends proportionable to their needs.

19. How to distinguish between the strength of the well & ill affected parties of any sort, from their number Trade, Wealth, Scituation &c.

20. It serves to adjust the numbers of Justices of the Peace, Constables, Sheriffs, Bayliffs and other officers; as also what number of Priests & Ministers are sufficient for every heterodox party.

21. It directs where to make and mend high-wayes, Causeys and Bridges to the best advantage.

22. It gives an account of all Smiths forges, & mills & malthouses; a matter of great consequence in time of warr or peace.

23. It directs the stocking of the country with Cattle of severall sorts, and what sorts; and what horses for coach, saddle, draught, or plough are necessary in the whole nation.

24. It facilitates all applottments and Collections of the Publicq Revenue.

25. It sheweth that there may be had in Ireland above 50^{m} fighting men, who (when the rest are disarmed) are able to resist ffrance itself, and to keep any party quiet at home at the same time.

26. How the said forces may all bee brought to places of Rendezvous within 3 dayes time.

27. How 7000 of them may bee brought in a Tides time to any Shoare where an enemy shall attempt to land in Ireland, & 300 men more every hower afterwards, with their convenient provisions.

28. How easily 6 places may bee fortified, and with how little time and money.

29. How, uppon a signall given, within 24 hours all the 50^m shall bee in arms, and the English protestant women and children putt out of danger.

30. Where the safest and most convenient places for keeping arms, ammunition and victualls may be settled.

(*Endorsed.* "The uses of Sir Wm. Petty's booke 1679.")

No. 51

THE METHOD OF ENQUIRING INTO THE STATE OF ANY COUNTRY

Take the state of England, and enquire upon all the heads found therein.

Get the best map of the country.

Get the chronicles of the same.

Get the statutes of the same.

Get a reduction of the weights and measures to that of England.

Enquire into the title and weight of their monyes.

Enquire who are the Legislative power; what is the power of the Chiefe Man; what are the severall Courts and Jurisdictions, high and low, and the limits of each.

How much silver in the day wages of a labourer; how much if a taylor, carpenter &c.; what the hire of an horse; what the price of an horse of 13, 14, 15 and 16 hand high.

What the price of an oxe of 2, 3, 4, 5, 6 yeares old; or of 200, 300, 400, 500 or 600 weight, leeane and fat.

The like of other cattle by their weight or ages.

What is the price of the most usuall graynes, reduced to English measure.

What is the ordinary and cheapest food of poore people.

Of how many days labor doth the poorest cottages consist.

How much seed doth an aker require, the *quota pars* of encrease at the extremes and medium. The manure.

The quota of arrable that lies fallow.

How many horses and men till 100 acres, and with how many dayes work.

Into what denominations are lands and the howsing of cottages divided.

How many street doores or howses in 2 or 3 of the chief cittyes.

How many soules in a family.

An estimat of the people in a citty; the accompts of burialls, birthes and marriages; difference of males and females.

The rent of lands per aker, and of howses per floare or area. The number of coaches, ships (of one 2 or 3 decks), or open boates.

The value of fish and fowle by the pound weight, as also of eggs, butter, and cheese.

The value of fruites in winter and somer.

The manner and measures of the publiq revenues, royaltyes, annuities (?), privileges &c.

Singularityes and Anomalyes in the Lawes and Customs.

What proportion of Divines, Physicians, Lawyers.

What are the estates of each of 5 richest of each sort.

What are the estates and numbers of Merchants.

How many howses of 20 roomes in the Great Citty.

What are the games, recreations, exercises, studyes and pastimes.

What are the bookes that do sell most, or whereof 3000 sell.

What are the Churchmen's (?) estates and way of livelyhood.

What are the names of the most numerous and noble families and their armes.

What arts, sciences and trades do most flourish.

What are the most eminent in every trade and faculty.

What is greater and nobler of its kind than anywhere else.

What monstrous or prodigious productions and accidents.

What weather and winds and meteors [are] most remarkable.

What ports, tides, currents, change of sands &c.

Who is favorite, who the most belovd woman, what Court beauties.

Who treasurer, chancellor, secretaryes, arch-priest, chief judges.

Who the companions and master of pleasure, and who are their *Amasiae*.

Who are the able exauctorate,[1] the feared, envied, persons. Who have and keep best intelligence, who [are] disinterested.

What alliances, fewds, friendships, between great men.

What are the passions, humors, appetites of the present Prince.

Wherein his fort and foible; his diseases, vertues, vices, talents &c.

Who are his friends and foes, naturall and by accident abroad.

What are the militia and forces of the country, ordinary and extraordinary, and the charge of the same [by] sea and land.

What is the nature and extent of the present revenue.

What are the frauds and diversions practised upon the same.

What small and base mony is current.

What interest is paid for mony.

What banks and Lombards are in use.

What provision made for sick, aged and orphans. Idlers &c.

What is the age of the oldest men that are knowne, and the sise of the talest.

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[1] *I.e.*, those who had been but were no longer in office.

What are the most comon diseases of the country.
What medicinall remedys are most in use.

No. 52

To bee the Kings Accomptant

For all the Lands in the Islands of his dominions, and what is appropriatd to his subjects upon the Continent of America & set out by Metes & bounds: vizt: how many acres of the same was the last yeare under corne, Mowed as Meadow, In Gardens & Orchards, Timber woods & Coppice, In Rivers & highwayes, In Parkes, Warrens & ponds, In Forests, chases, In Comons & derelicts.

Of the People, vizt: their number, sex, age, Marriages, birth, burrialls—their titles, offices, trades, Religion & nation. Their quality, as freeholders, Electors to Parlement in Cittyes & Burrowes. Such as pay taxes, Impotents that receive almes, servant persons & beggars.

Moreover:

1. Of Churches, houses, cottages, hospitalls, schooles, workhouses, harthes and families.
2. Of tame cattle & fowles, with estimats of fresh fish and wilde fowle and vermin annually.
3. Of shipping for War and Trade, into and from every port of the world.
4. Of military forces of all sorts and their quarterings.
5. Of goods exported and imported, and the ballance of trade with the whole world, and each people, Kingdome, & state.
6. Of the revenue from customes, excise, harthes, rents, the church and other small estates.
7. Of coales, of timber and boards, Iron, salt-fish, & malt drinks and tobaco, sugar and salt in particular.

8. Of Tythes and the church revenues & benefices.

9. Of smithes forges.

10. Of the bills of mortality of all the great cittyes of Europe that keep them.

11. Innes, alehouses, carryers, faires & markets.

12. Countyes, hundreds, dioceses, parishes, deaconrys, hamlets, Gentlemen's seates, places of courts and Judicatures and priviledged [places].

13. Lists of the men of greatest reputation in each faculty.

14. Of the number of certaine select bookes yearely sold in England.

(*Endorsed.* "Accomptant General of Lands & Hands.")

There are among the MSS. several other 'forms for Parish Bills' similar in type to that which is printed on p. 180. They are arranged for the following additional statistics:

"Numbers of Freeholders; Barons and Knights, in Title; those who write themselves Esquires and Gentlemen; of Catholiqs, Protestants, Dissenters, in Religion. Births, Christenings, Burialls, Mariages, for the year.

"Numbers of Baristers, attorneys, sollicitors, Phisitians, Chirugions, Apothecarys, Laborers, Husbandmen, Mariners, Merchants, Retaylers, Artisans, of those who live by Fishing and Fowling, Churchmen, Soldiers, Traynbands.

"A List of the severall artisans, vizt: Carpinters, Smiths, Weavers, Tanners, Painters, Bakers, Coopers, Sadlers, Turners, Plumers, Brasiers, Penterers, Dyers, Brewers, Founders, Potters, Glasiers, Skinners, Glovers.

"The Accompt of Houseing, Land, Cattle, Shipping &c.; *e.g.*, Number of Houses, Houses of one Hearth, of between 1 & 6, of between 5 & 10, of between 15 & 20, of 20 and upwards. Mills of all sorts, Malt houses & Kills, Smiths forges, Public Brewhouses. Number of Statute acres, acres under corne, under hemp & flax, Meadow, Coppice, Timber wood of —— Tuns per acre, Orchards, Garden, Fishponds, Parks & Warrens, Grazing Land, Mines, quarries, & collieries, Comons, forrests, & Closes. Horses fit for war & coach, for the saddle, for cart & plow. Colts under a year old. Milch

A BILL FOR 10 PARISHES

The names of Parishes.	1. The number of house-keepers & houses.	2. Number of hearths.	3. Statute acres by estimet.	4. Number of people, males, females.	5. Under 10 years old.	6. Of between 10 & 70.	7. Of above 70.	8. Males between 16 & 60 exclusive.	9. Females between 16 & 48 exclusive.	10. How many of the same are married.	11. Incurable impotents.	12. Such as live upon almes.
1 A												
2 B												
3 C												
4 D												
5 E												
6 F												
7 G												
8 H												
9 J												
10 K												

Cows, Oxen under 3 years old, Yearlings & under; Other great cattle. Ewes, Weathers, Lambs under a yeare old; other sheep. Swine & goats of value. Poultry & game fowl of value. Sea Vessells under 10 tunns, of between 10 & 50, of between 50 & 100, of between 200 & 500, of 500 & upwards. Wooll. Corne out of ground. Iron unwraught. Lead in piggs & sheets."

No. 53

A Gross Estimat of the Wealth of England considered in the particulars following, vizt:

	millions
1. In the Lands, Farmers Howses, Gardens and Orchards, Growing Woods and Timber, Mines, Mineralls and Quarrys, the Benefitt of Hunting, Hawking, Fishing and Fouling, estimated in all to be worth	160
2. The Ground and Howses comprehended within the Bills of Mortality within the Citty of London	20
3. All other Howseing in England (except what is mentioned in the 2 last paragrafs)	25
4. The Howsehold Goods and Furniture belonging to all the said Howses	15
5. The Coyned Mony, Bullion, Plate and Jewells	10
6. The shipping of all sortt, comprehending the Navy	10
7. One years Food and Payment for 6 millions of people	40
8. The usefull Cattle of all sorts, over and above the said years provision	5
9. Materialls and Goods unwrought; together with Wares, Goods and Marchandises wrought up and made ready for use, comprehending Armes and Amunicen, with Tradesmens Tools and Utensills	15
	290[1]

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[1] For all the above figures compare *Verbum Sapienti*, chap. i (Hull, 105-108).

The Rent and Intrest of 300 millions at 5 per cent. is 15 millions per annum; and the Expence of 6 millions of People being estimated as aforesaid at 40 million per annum, it follows that the Labour of the said People is worth 25 millions per annum. Which at 20 years Purchase (amounting to 500 millions) is the value of the People. Which, divided by 6 millions, makes the value of each head to bee above 83£[1]; which Rate ought to bee apportiond higher and lower to Artists, Mechanicks, Seamen, Husbandmen, Labourers, and to persons of severall ages.

Memorandum. That the Reasons of the severall above mentioned valuations, and the uses of the said Estimat, are elsewhere sett downe at large.

(*Endorsed.* "A gross Estimate of the value of the Lands, Goods & People of England—1685.")

No. 54

Of a Poll Bill. 1685

A true, pure and perfect Bill for Poll-mony, should reasonably divide the People as followeth; vizt:

1. Into Dukes, Marquesses, Earles, Viscounts, Barrons, Barronets and Knights, of which there is no dispute. Adding Arch-Bishops to the Dukes, great officers of State to the Earles, Bishops and Chief Judges to Viscounts, Puny Judges to the Barrons, Colonels to the Knights &c.

2. The wife and widdow is to pay half what the

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[1] Petty's estimate of the 'value per head' of the population varied considerably at different times. In his *Verbum Sapienti* (Hull, 108) it is £69; in the *Political Anatomy* (Hull, 152) £70; in the *Political Arithmetic* (Hull, 267) 'above £80'; in the *Treatise of Ireland* (Hull, 564) 'near £70'; while in *Magnalia Regni* (*infra*, p. 265) it rose to £90 for England, though remaining at £70 for Ireland.

husband doth; the unmaryed Children between 16 & 21, one third; between 7 and 16 one sixth, abating [to] $\frac{1}{12}$ for children under 7.

3. The rest of the People may bee divided into Esquires, Gentlemen, Yeomen, Artizans, Labourers, and Paupers.

4. Whereunto may be added ter tenants or Rack Rent farmers of Land, who may pay a penny upon their pound over and above their other Qualifications.

5. The Parrish is to pay for the Paupers according to the Poor Book, but may force them to repay the same by Labour within a limitted time; or may punnish their Boddys, in case of willfull failor.

6. Labourers are such as have no trade, whereunto common Husbandmen may be added.

7. Artizans are to bee determind by a List of Trades made for that purpose.

8. Yeomen are retaylers, shop-keepers, Master Artizans, Masters of small vessells—Freeholders under 20£ per annum.

9. Gentlemen are the sons of Knights & Barronets, ffree-holders of 60£ per annum, such as have usually writ themselves Gentlemen; Commanders of ships of Force, Attornys at Law, Masters of Art in the University, Church-men in full Orders, such as will swear themselves worth 1000£; such as will pay by way of fine 10 times the present tax; such as have constantly and duely used Coats of Armes, Military Commissiond Officers below Captains.

10. Esquires, all the Sons of Barronets, the eldest sons of Knights, Commanders of ships of above 20 Gunns, Captains, Majors, and Lieut.-Colonels, Freeholders of 150£ per annum, such as are named Esquire in any Instrument under the great seal, Justices of Peace, Doctors in any Faculty, Barristers at Law, such as have writ themselves Esquire and do pay by way of fine ten times the tax. Prebends, Arch-Decons and Deans.

11. Paupers are to pay 1*s*., Labourers 3*s*., Artizans

6*s*., Yeomen 10*s*., Gentlemen 40*s*., Esquires 100*s*., or 5£, Knights 10£, Barronets 20£, Barrons 50£, Viscounts 80£, Earles 100£, Marqueses 200£, Dukes 400£. Their wives, widdows, & unmaryed children paying & abating in the proportion above mentioned. Lords, Barrons, and Knights makeing no abatement for their young children.

Let precedency within the same Order or Classes bee regulated according to Age, Seniority, Wealth, or paying the greater fine.

For preventing of Forgery, Lett each Order have a seale in Try-Angles, Squares, Pentagons, Hexagons and Circles; each of 3 sises. Makeing in all 15 sorts of seals, the Impression of which seals is to bee recorded in the Parrish (of which there are to bee 12 thousand) & every man to wear his seale about him. But what is to bee graven within the seals shall bee mentiond elsewhere.[1]

No. 55

THE APPLICATION OF THE 5 BOOKES TO THE KING'S REVENUE

Suppose there bee made the 5 Books following, vizt:

1. One of all the Lands; their quantity, figure, Scituation, quality, tenancy, Peopling, Stocking, Tillage &c.

2. Another of all the People; their Ages, sex, Mariages, Religion, Office, Trade, Possessions &c.

3. Of the Quantity of each particular Goods and Merchandises, Imported and exported; their prises; where they are made or Grown; the petty Charges of shiping them; their freight, Dutyes, the places from whence they come and whether they go &c.

4. Of the Revenue accrewing out of every Parish by Excise, Lycences of Ale, wine and strong waters,

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[1] *Cf.* No. 142 *infra.*

Harths and ffier-places, Customes, Quitrents, Tenths and first-fruits; fines and pænaltys, and other Casualtys.

5. A miscellany Book of Shiping, exchang, fairs and markets; Coynes, mills, kills and Tan-yards; Schooles, Prisons, Corporations, ffreeholders &c.

How to apply the said 5 Books to the emproveing, equall apploting, and easy levying the King's Revenue, as the same now is, or may hereafter bee established by Laws, vizt:

1. The second Book alone, doth give a perfect accompt of Poll-mony, shewing the number of People above any age, their Titles of Honor, their offices, Professions and Religion, and what other qualifications upon which the tax of Poll-mony may bee grounded; so as the King may perfectly know before hand unto what summe of mony any Poll that can bee propounded shall amount unto.

2. By the first Book may bee known unto what summe of mony any Subsidy may amount unto, according to any quota of the pound Rent; and according to any Quota of personall estate. And with all how any summe to bee levyed by a Land-tax, may bee equally and proportionally taxed.

3. By the same first Book may bee known what the pænaltys for not planting Hemp and flax may amount to, and how the same may bee moderated and adjusted; for that the said pænaltys may be turned into a tax upon tillage greater or lesse, as shall bee thought fitt.

4. By the first Book, the pænaltys for not comeing to Church (applicable to the Relief of the poore) may bee exactly computed and moderated, to such a proportion as the said occasions shall requier, upon the severall Degrees of Persons.

5. The fourth Book and first Book doth shew the value of Releifs by setting forth the yearly Quitrent

payable to the King; as also the number of Tenants which are to pay the same.

6. The fourth Book sheweth the excise and Lycences in each Parish, and the quantity of Beer, Wine, Brandy and other strong waters spent, and the Gayn which is made by Retaylers thereupon; So as the mony which by the Law may bee taken for Lycences, may bee computed and better adjusted.

7. By the Second Book may bee computed what quantity of Ale, Strong-beer and Small-beer and Aquavitæ made in the Country, may by a moderate and wholsome use thereof, bee annually spent in the whole nation; and how the expence of so much may bee introduced and easily borne by the People.

8. By the third Book and second Book may bee estimated, how much of every imported Commodity, may bee annually spent in the nation; and what the Dutys of the same may amount unto, and how the use of so much may bee introduced? And withall, a Comparison may bee made, between what may bee payable to his Majesty, and what hath been actually accompted for.

9. By the first and second Book, the tyths and Church Lands may bee sufficiently valued; and consequently such use thereof may bee made in the tenths and first-fruits, as shall bee thought fitt.

10. By the fourth Book may bee discovered why the Excise in the country is not so great as the same is in the Citty; As also the disproportions of the Excise in severall places, with reference to the number and wealth of the People; to the end that the fault so found may bee rectified.

11. By the said Books may bee known, what the Customes have amounted to for the time past; and how by a future Law the same summe, or a greater or lesser summe, may bee proportionably raised upon a few grosse Commoditys, and such as are of common universall use; as Wine and other Drinks, Tobaccos, Sugars, Fruits, Salt, Pepper &c.; and upon what

Commoditys such Dutys may bee imposed, as may amount to a prohibition of the same. Which change, tends to lessen the Charge and vexation of levying the said Dutys, to the Incouragment of Manufactures, and setting trade free in many particulars.

12. The fourth and fifth Book will shew, how an Excise upon Malt instead of Drink, may bee adjusted; and to any summe propounded to the advantage of the King, and the ease of the subject.

13. By all the said Contrivances, a Revenue equall to what is at present, may bee levyed at half the Charge, which hath hetherto been absolutely necessary.

14. By the aforementioned Books of Lands, Hands, Trades, &c. the work and employment of the People may bee so regulated, as to enable them to pay the present Revenue more cheerfully; and to inlarge the same, in case of necessity.

15. Such facilitations of the Government may bee made by help of the said Books, as shall save one quarter of the present expence; which is the same thing as to emprove the Revenue in the said proportion.

No. 56

MATERIALLS FOR A NEW HISTORY OF LIFE AND DEATH, vizt:

1. Of 100 birthes, how many live to bee 10, 20, 30 &c. yeares old—to 100?

2. Of 100 persons now alive, how many are aged between 1 and 10, between 10 and 20 &c.—to between 90 and 100?

3. Casting up the ages of 100 persons, what is the medium of the whole, or $\frac{1}{100}$th part thereof?

4. Of 100 persons' lives, what is the medium, or $\frac{1}{100}$th?

5. Of 100 physicians aged —— yeares in all, what is

the difference between them and the like number of ages of any other way of life?

6. What is the difference of lives between 100 at London, where are the best physicians, and 100 where are none, as islands?

7. What is the meane length of life in man, and in 10 other beasts, 10 birds, and 10 fishes?

8. How the times of being in the womb represent the time of life in severall animalls?

9. What visible differences in the flesh, blood, and bones, of animalls of 10 yeares life and men?

10. What difference in the proportion of the quantity of blood, bones, hayres (?), bowells, flesh, fatts &c. in each of them compared with the whole weight?

11. What different effect hath eating and drinking much, in comparison of the weight of the whole body, upon the length of life?

12. How to make a scale of salubrity and longevity for severall places and ages of men?

13. How to distinguish those who dye of age, from those who dye of disease?

14. A table of the proportion of those who dye of every chief sort of disease, inwards and outwards.

15. Of new diseases, and diseases of seasons and places.

16. Of poisons, or materialls whereof 1, 2, 3, or 4 graynes do cause death; and within what number of dayes and with what symptomes.

17. What quantity of blood is best for every man, and how much is barely necessary, and how much uselesse?

18. What are the visible quality of good or bad blood?

19. Of the best quality of food.

20. Of the different nutrition in several foods.

21. Of fasting and its measures.

22. Of exercises, and the labors of severall artizans and others.

23. Of excessive heates and colds, and their effects.

24. Of the different seasons in severall animalls.

25. Of the numbers of each animall's young ones, and their whole life at a medium.

26. Of the proportion of exercises in each animall.

27. Of the time and measures of fasting in each.

28. Of the sleep of animalls.

29. Of the frequency of worke, intervalls and seasons of the yeare.

30. Of the seasons of eating severall animalls of food.

31. What is the cheapest food in each country of the knowne world?

32. What difference between water and other drinks?

33. An explication of strength and Nimbleness in severall animalls: their slow and fast motions.

34. Of paleness, trembling, blushing, fainting.

35. How many men of 100 yeares old have dyd in England within 30 yeares, the whole people being 7 millions?

(*Endorsed.* "History of Life and Death.")

No. 57

In Merchandize

A Merchant is one who buys and sells.

There are grain merchants, grossers,[1] retaylers, speeders (?), and growers or manufacturers, Masters, gristers, merchants.

That England is one party, and all the rest of the world the other.

All Kingdomes and States are as so many merchants, and all Ports are as so many merchants, and all shops are so many merchants. All companies the same:—To plunder persons.

Brokers and factors deale upon other men's stocks.

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[1] Those who deal 'in gross' or wholesale.

The Price of a Comodity subsists:

Of the first naturall materiall.

The manufacture to the state of use.

Carriage from the place of making to that of use, and vessels.

Dutyes to the Soverayne of them that buy and sell.

Examples

For Butter

There is: 1. The Cow. 2. Her feeding in winter and somer. 3. The dairy vessells and labor. 4. Carriage.

Deducting: 1. Calf. 2. Wheyes. 3. Coarse cheeses.

In Pilchards

1. The fishing places. 2. The nets, boates, howsing, presses, cart. 3. Salt. 4. Labour. 5. Ensurance upon accidents of the season. 6. Carriage.

Deduct. Traynoyle.[1]

In Cloth

Wooll, picking, sorting, washing, dying, oyling, mangling, carding, spinning, weaving, brushing, fulling, shearing, pressing, packing, wrapping and carriage.

In a book

1. For the author. 2. Paper. 3. Composing and distributing the letters. 4. Printing of. 5. Collating, binding, covering and adorning.

In a Ship

1. Charge of building the hull, the masts and rigging. 2. Ground tackle and sayles. 3. Victualls. 4. Wages. 5. Defence. 6. Riske. 7. British port charges, Lighthouses, anchorage.

In Corne

1. The Land sowne, and fallow, and manure. 2. Plowing and harrowing. 3. Seed and sowing.

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[1] *I.e.*, the oil made out of fish refuse.

4. Fencing, weeding, bird keeping. 5. Cutting, gathering, carriage. 6. Vermin, barne, threshing, winnowing, sacking and carriage. 7. Accidents, of mustards growing &c.

In Iron

1. Mine, place, water, depth, digging, measuring, carriage, calcinning. 2. Coales, wood, cutting, cording, coaling, levers, tackles, carriage, dust and braise (?). 3. Forge and furnace, water courses, outhousing, clerks, founders, firers, hammermen, hewers, anviles, and other instruments, weights, inheritments, carriage to market.

In Land

1. Chiefe rent to the King. 2. Rents and chiefrents to the landlord. 3. Taxes. 4. Canting[1] charges. 5. Suite and service to Courts Leet and Baron. 6. Attendance at Assize. 7. County, Barony and Parish dutyes.

A Wooden Table (Joyner's worke)

1. Timber—felling, hewing, sawing into boards and scantlings, seasoning—offell and refuse. 2. Workmanship—Tooles, glew, time of setting and carriage. 3. House rent, shop rent, scot and lott.

In Retayled Goods

1. Fraud and error in weights, and tare &c. 2. Buying too much, or too little, and unseasonably. 3. Gluts and dearthes. 4. Perishing. 5. Bad debts and accidents of howsing. 6. Evill servants—horses, donkey, &c.

In Meate at an Inne

1. The Meate from the Butcher and dressing. 2. House rent, bedding for all, candles, servants, good washing of linnen, Ware and Tare. 3. Evill servants.

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[1] *I.e.*, disposal by auction.

In goods sent by the seas

1. The Price from the last Vendor to the Merchant. 2. Brokerage. Warehouse. 3. Small charge of posting letters, carriage. 4. Custom house duties, lighterage, wharfage. 5. Freight and damage of goods. 6. Ensurance. 7. Interest of mony. 8. Charge of Living.

In Laces and Stuffes

1. The Price to the makers. 2. House, Ship, servants, interest. 3. Growing out of fashion. 4. Bad servants and bad debts.

In an horse

1. His Price, and Errors in buying. 2. Naturell and unavoyable accidents. 3. Hidden diseases and faults. 4. Stable, meate and dressing. 5. Want of employment.

Qualifications for a Merchant

1. The dextrous use of arithmetic and keeping accompts. 2. Good intelligence and factors abroad. 3. The knowledge of weights and measures in all places. 4. The weight and faces of coynes. 5. The causes of different rates in usury and exchange. 6. Where and at what seasons all commoditys are grown, made, shipped and spent, or re-exported. 7. The dutyes of the chief commoditys in severall states. 8. The number of ports and the shipping, as to number and tonnage, going out and coming in of each per annum *comunibus annis*. 9. The value of mescariages (?) per annum into England. 10. Freight, port charges, wages and victualls. 11. The estimation of men's abilities by their Trade and business. Punctual payments. Lawsuites and wrangles. Manner of living and expense. Fortunes to their daughters. Common fame. 12. Measuring other men's fancies and opinions and errors.

No. 58

Of Lands & Hands

1. From the number of freeholders in each Country may be seen The Inaequality of the power which chuseth Knights to serve in Parliament, & a remedy may bee found against the disorders & uncertainty of due Elections.

2. From the number of other Electors for citizens & burgesses to serve in parliament, may bee seen the Inaequalities abovementioned, vizt: that in some places onely a few Aldermen chuse, in others the greater number of Burgesses, in others all the freemen, in others all the Inhabitants within the bounds of the Corporation. Moreover what difference of people there is the said Corporations, & that the representees, Electors, & representors do very ill correspond.

3. It will appeare from the premises That of all the men of 21 yeares old who have Lives, limbs, libertyes & Estates to loose & save, How few have any right at all to chuse representatives to parliament.

4. By the aged of the Parish is meant The quotient of the sum of all the ages of the parishoners devided by the number of them; which quotients show the salubrity or longevity of the place or both.

5. The numbers of people that are of every yeare old from one to 100, and the number of them that dye at every such yeares age, do shew to how many yeares value the life of any person of any age is equivalent, & consequently makes a Par between the value of Estates for life & for yeares.

6. From the premises & the yearely interest of mony per cent., arises the valuation of Lands whose yearely rent is knowne.

7. From the knowledge of the numbers of the professors of all religionaryes who are distinguishable by sensible marks (as Catholiques, legall protestants, Anabaptists, Quakers, Socinians & Jewes) may be

understood the meanes & difficultys of bringing all to uniformity, and the charge of keeping Peece amongst such & so many dissenters.

8. By knowing the number of working hands of between 10 & 70, and the number of those already employed in trade & faculties of gaine, It may bee knowne how many spare hands there are, & consequently what new trades may be introduced without destroying what are already.

9. By the knowledge of Naturall & Incurable Impotents, the disposure of all publiq & private Charityes, may bee regulated (as by the knowledge of spare hands) The rules for Workehouses, Colonyes & places of speculative Studies may be found.

10. By the proportion between Maryd & Unmaryd teeming women, may bee found in what number of yeeres the present stock of people may bee encreased to any number assigned, answerable to the defect of the peopling of the nation for strength or Trade.

11. From the number of males of between 16 & 60 & the number of necessary Workmen, may be found (1) the practicable number of the Trayne bands or Grand Militia, (2) What part of them are necessary for a Mercenary army, (3) What part of the latter for a praetorien guard,[1] & of the last for the guard of the King's person, who are to [be] all such whom the King personally knowes.

12. By the proportion between marriages & births, & of mothers to birthes, may be learnt what hindrance abortions & long sucking of children is to the speedier propagation of mankind; as also the difference of soyles & ayres to this foecundity of women.

13. From the difference between males & females, and the difference [in the] duration of their prolification, may be found what number of males may be spared for employments whereunto Caelibet is suitable—as to Churchmen, students of curious Arts, travellers of curiosity, men of Trust &c.

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[1] *Cf.* No. 1, p. 6, 'The Three Armies.'

14. In the accompt of Burialls, Casualties should bee distinguished from diseases, Diseases into Inward & outwards, Inwards into Acute & Chronicall, Chronicall into such as depend upon the Ayre, soile & food of the Country, Acute into contagious & others. And all to bee differenced by symptomes obvious to sense without any extraordinary skill.

15. The Burialls should not bee kept by uncertaine quantities of ground now called Parishes, nor scarse numbers of houses, but by the thousand of heads, living in houses with —— harthes, & lying with —— acres of land.

16. Weekly bills should bee of sudden changes, as of acute, contagious diseases, and the prices of necessarys, which rise & fall upon accidents.

17. Quarterly Bills.

18. Yearely.

19. The number of persons living by seafishings, river fishings & Hunting, as also by taking Wild fowle, doth much signify to the value of the county.

20. The number of people dying where the faculty of Medicine is numerous & where The same is otherwise, shewes the value and effect of that art. The same may bee sayd of professors of the Law.

21. Observations should be made how many dye per cent. of husbandmen, seamen, & sea fishermen; sedentary trades within doores; miners & collyers; Plumers, red lead, white lead makers & Letter founders; Dyers, brewers, felt makers, cookes, smithes &c.

22. How the marriages of a subsequent yeere answer the burialls of the next precedent.

23. N.B. a Citty or Market Towne should bee described by the number of parishes and the number of statute acres which such parishes do contayne; with how much thereof is covered with buildings, how many houses or familyes, how many harthes, & how many heads, and the heads to be putt into Thousands.

The Second Part

1. By the just number of cases and of the people, & the quality of the Land, to judge whether the territory be sufficient for the mouthes.

2. If it bee not; to discover & compute how many acres more than at present may be brought under corne & gardens by the hands that now are, and by those that may be added.

3. To judge in how many yeares England may bee peopled by generation as fully as the territory will feed.

4. By the acres under corne & gardenge, by the number of Cattle & People, by the number of artisans, by the number of Shipping seamen, to judge the Price or yearly rent of Land.

5. To make a Par between lands & hands, between labor & art, between work & authority, between Office & favor with the Prince.

6. By the number of people & provision of Cattle & Corne, to frame a sumptuary Law in case of famine; as also rules for exportation in case of plenty.

7. By the quality of Timber growne in England for the last 7 yeares *communibus annis*, and the survey of timber trees, to estimate the rising & falling of the price thereof.

8. By the nature of the Iron mine and fuell in England, to judge of the Iron Trade here in comparison with Sweden, Biscay, & other places.

9. By the number of ships yearly cast away & of seamen drowned, to compute freight & ensurance.

10. By the rents of Lands, number of Merchants, stock in forraine Trade, to compute the value & gayne of forain Comerce.

11. By rents of lands & houses, and the weekly expence of the people, to compute what mony will drive the Trade of the nation.

12. By making a new coyne of a midle goodness, to compute the current mony of the Nation within some few yeares.

13. To make Coynes uniforme & of intrinsic value, discernible by weight, measure, & number without the test of touch.

14. By the perimeter of the Island & what part thereof is fit for Landing, to compute what force is necessary against Invasion.

15. By the number of religionaryes & parties, to know what number of soldiers ought to bee kept in pay.

16. By the number of soules, & church rules, & quality of Land, to know the just number of priests & Churchmen.

17. By the number of Decrees, Verdicts & Judgements in all Courts, to know the number of Judges & Lawyers necessary. And by the number of writs & bills to know who is vexatious.

18. By the number of people, the quality of inebriating liquors spent, the number of unmaryed persons of between 15 & 55 yeares old, the number of Corporall sufferings & persons imprisoned for Crimes, to know the measure of Vice & Sin in the Nation.

19. By the number of 20 sorts of books, sold yearely in the nation, to know the Genius of the people.

20. By Postage of letters, paper spent, & the number of Almanackes to compute the leisure (?) of the nation.

21. By the number of Coaches & horses above 15 handfills high, to judge of the Trade of breeding horses & admitting other Cattle from Ireland &c.

22. By the multitude of Lawsuits, to guesse at the Wealth & wantoness (?) of the people.

23. By the harthes of houseing to guesse their value.

24. The different value of howses as depending upon: materialls, age, contrivance, fashion, scituation.

25. The different yearly Interest or rent of Lands, Houses, Mony, shipping, horses, jewells.

26. The charges of a State or Country: (i) of the clergy, (ii) administration of Justice, (iii) Forces by Sea & land, (iv) Ambassadors & Intelligence, (v) Reliefe of Incurable Impotents, (vi) Maintenance for

students of Curiosityes, (vii) Publiq shewes, (viii) Persons of m . . ., [*illegible*] (ix) Streets, highways. Latin.

27. The Chiefe Imported Comodities, viz: Wines, oyles, fruits, silver, salt, silk, Cotton, Tobacco, Tea, Coffee, Madder, Indigo, Saltpeter, plasters, potashes, drugs, Iron, Linnen, paper, fruites, sugar, fish, copper, for timber & masts, Deales, b . . . rosin (?) plank.

Exported out of England & Ireland: Wooll unrought, Manufactures thereof, Lead, Hydes & Skins, Tallow, Butter & Cheese, beefe & mutton, fish, Horses, pit-coales, Portland Stone, beere, Soape & Kelp, Copper & Allum, gunpowder, Iron ordnance, Lanthorn hornes, fullers Earth, Tin.

28. By Land Carriage from London: To Exeter &c., Chichester, Chester, Gloster, York, Oxford, Norwich, Cambridge, Canterbury, Colchester, Bristoll.

29. By Innes, Tavernes, Alehouses (?), Coffee houses.

30. By Malt Kills, Malt houses, & Barly lands.

31. By Grist mills.

No. 59

MERCURIUS LONDINENSIS[1]

Weekly

1. Burialls, Epidemicall Diseases, by Parishes.
2. Wind, Rayne, Sunshine.
3. Prices of severall comodities.
4. Exchanges.
5. Severall Grand Comoditys, Exported & Imported.
6. Ships come in, gone forth. } per tun.
7. Keeles Layd, ships Launched. } per tun.

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[1] A *Mercurius Hibernicus* or 'the Irish Intelligencer' was published in Dublin after the Restoration. It is a curious little demi-octavo 8-page news sheet of which a few copies have been preserved among the Petty MSS. Petty was in Ireland at the time and may have had something to do with its production.

8. Apprentices bound, Made firm, Broke.
9. Lawyers admitted, Call'd to Barre.
10. Suites commenced.
11. Admitted to the University.
12. Lodgers, guests, forraigners.
13. Carriage by Wagons, horses, Barges. Coales & Inland Navigation.
14. Playes, & Preachers before the King & Lord Mayor.
15. Gresham College Lectures, Experiments, Transactions.
16. Post Letters: Dublin, Edinburgh, France, Flanders, Holland.
17. Excise on small beere, strong & Ale.
18. Customes received.
19. Values of goods: Exported, Imported, Re-Exported.
20. Mony coyned; Gold, Silver, Copper.
21. Plate vessell, touched & Essayed.
22. Things lost & notices.
23. Bookes published.
24. Houses: foundation, covered, unlett, demolished, rebuilt.
25. People sick.

Monthly

Buryed, Maryed, Borne: alive, still-born, abortive: by Parishes.

Comitted to Prison: for debt, crimes, small matters.

Received into & sent out: hospitalls, Bedlam, orphans.

Wherryes, Coaches, Carres made.

Tryalls at Law.

Almanacs for month.

Memorable Accidents out of the gazettes foraigne.

Observations on the prices courant.

Bills of entryes.

Recognisances, Judgements, statutes entered.

Quarterly

Fines & Recoveryes.

Calld to the Barre.

Degrees in Universityes.

Colledges—numbers of fellows, scholars, fellow comoners, pensioners, servitors.

Numbers of Inns of Court men.

Numbers in Prisons (for debt & crimes) hospitalls, Bedlam, orphans.

Numbers of Citty companyes.

Numbers of Physicians, Apothecaries, Chirugeons.

Number of Merchants mentioned in the Collumns of Entry.

Casualtyes of deathes.

Ages of dying men, *per Lustra*.

Numbers of each Religion above 16 years.

Beggars, Almestakers, Impotents.

Marryed Couples.

Ships named in the lists of Entry.

Yearely

Ages of all living from 1 to 100.

Their generall Professions.

Species of Artisans.

All Casulatyes & Remarks, and memorable Things.

Almanac for the yeare.

Observations on the whole.

Numbers of the People.

Males & females.

Shipping in the River: strange, owne.

Grammars (Greek & Lattine), Gazettes—Almanack—Bibles—old Comon prayer.

Carres, wherryes, coaches, in being.

Lighters—Porters.

A Map of London, in colour. Its description by streets, Lanes, Courts, Allyes, Churches, Inns, Taverns, Wharfes, Landing stages, Palaces.

VIII

TRADE

(60) History of Trades—(61) Observations of England—(62) An Explication of Trade and its increase—(63) Some Observations upon the Trade of Irish Cattle—(64) Considerations concerning Foreign Trade—(65) Dominion of the Seas—(66) Of the Mare Clausum—(67) Of a Mare Clausum.

TRADE

THE theory and practice of Trade offered an attractive field for the exercise of Petty's 'Political Arithmetic.' As an owner of Irish land under the Cromwellian settlement he was, moreover, interested financially in the Commerce between that country and England, at that time the only market for the wool, cattle, and agricultural produce of the sister Isle.

One of his earliest projected works was a *History of Trades*, begun upon Samuel Hartlib's encouragement in the year 1647 but never finished (Hull, xv). I have found among the MSS., and printed at the commencement of this section (No. 60), some notes endorsed with this caption. They contain a synopsis of the intended History, and were presumably compiled at the time it was entered in Petty's list of writings.

No. 61, *Observations of England*, and No. 62, *An Explication of Trade and its increase* (which are also undated), may well be other portions of the 'Collections' which Petty tells us he had made for this work in 1647 (*cf.* No. 158 *infra*). In the first of these papers he gives us his ideas on the origin of Trade. They were presumably his earliest thoughts on this subject, and though some are rather startling (*e.g.*, paragraphs 8 and 10), there is much truth in the general argument. We here find some indication of Petty's basis for his plea that three acres were necessary per head of the population (Introduction, p. xxxvii), though he had apparently not yet determined the figure, which is left blank in this MS. No. 62 starts in his favourite manner by a series of definitions of the terms involved. Some of these are amusingly direct, if somewhat crude—as for instance that given for 'Power,' which may be compared with Hobbes' more elaborate analysis in the *Leviathan* (chap. x). He goes on to trace the evolution of Industry from Trade in the three staple necessaries of mankind—Food, Clothing and Houses—to the more complex system of modern commerce. The process in Petty's view involved a gradual transfer of 'power' from the owner of the soil, who could pick and choose whom he wished to employ, to the tradesman who, as he points out, would control the situation when the demand for manufactured commodities began to exceed their supply.

Next in order of date comes the *Observations upon the Trade in Irish Cattle* (No. 63), written, as it seems, when the Cattle Bills which prohibited the export of cattle from Ireland into England (1663) were under consideration. A portion of this paper has already appeared in Fitzmaurice's *Life* (141-142).

No. 64 was probably written somewhat later and brings us to the Consideration of *Foreign Trade*. Petty here propounds a plan—not unlike that which was employed against the Germans during the Great War—whereby the narrow seas contiguous to the British Isles might be kept inviolate by a chain of picket boats, in communication by signal with one another, and with bases from which a 'striking force' might quickly issue to expel or sink any unauthorized intruder. He seeks to show how by this means, coupled with arrangement as to spheres of influence with the other powers of Europe, England might hope to secure two-thirds of the whole commerce of the world.

In No. 65 the matter is developed at greater length under the title of the *Dominion of the Seas*. This paper was no doubt written while Petty was Judge of the Admiralty Court of Ireland. It may be compared with the MSS. on the same subject and of about the same date by Sir P. Meadows, Sir Leoline Jenkins, and others (British Museum, Add. MS. 30211). It consists of four chapters. The first aims at showing what is meant by 'Sovereignty,' 'Empire,' and 'Dominion.' The second, what these terms involve when applied to the Sea and all matters connected therewith. While in the third he seeks to prove that England has an inherent right to exercise Dominion of the Seas, and in chapter 4 he offers a computation of the expense hitherto involved by the maintenance of British maritime supremacy. He finally reaches the conclusion that apart from traders' profits 'nothing but honor & glory could be gotten by the business.' It must be this paper which is referred to when Petty speaks (*Treatise of Ireland*, Hull, 573) of having dealt 'elsewhere' with the question of the Profit & Loss involved in a *Mare Clausum*.

The idea of the reservation of the narrow seas as here set forth was of course by no means a new one. In his *Mare Liberum* Grotius had early in the century contested the English claim to maritime supremacy, while Selden had retorted with his *Mare Clausum seu de Dominio Maris* in 1635. Petty seems to have become increasingly attracted by the notion. It is frequently mentioned with approval in his *Treatise of Ireland* and elsewhere. The two short papers at the end of this section (Nos. 66 and 67) have both got this caption, and contain Petty's conception of the Mare Clausum in briefer shape.

No. 60

HISTORY OF TRADES

Of knives, swords, rapiers, rasors, sissers, cloth-sheares, sawes, axes, adds, sythes, needles, chisells, gouges, plying irons. Of steele, iron, hafts.

Of arquebuses.

Locks and keyes.

Anchors and ships irons.

Cast iron.

Of the various hulls of ships and boats.

Of their various rigging and masting.

Of the arte of sayling, rowing, canting, towing.

Of all the several pumps and other engines for raising and bringing of water.

Of rivers, springs, and ponds.

Of finding, digging, smelting, refining, separating, compounding of metalls, and working the same into severall uses.

Of windmills, watermills, oyle mills, iron mills, clocks, watches, jacks, and other wheele workes.

Of wedges, skrewes, hawsers, pullyes &c.

Of casting and founding; from ordnance and bells, to medalls.

Of stamping and coyning upon all materialls.

Of distillation, sublimation, calcination, chrystallization, vitrification, phosphorisation.

Of salts, saltpetre, allum, vitriol, sugar, borax, sal ammoniac.

Of wines, cyder, beere, ale, malt, hops, whey, and other fermenting liquors.

Of milk, butter, and cheeses of all sorts.

Of boyling, roasting, frying, broyling, baking, stewing, pickling, smoaking, preserving in sugar, vinegar, salt, spirit of wine. Some principall materialls of sauces now in use.

Of spinning; for cables, cloth, linnen, silk, hayre, glasse, metall wyres.

Of weaving; from tape, linnen, wooll, silks, velvet, sattin, diaper and all flowerd stuffes.

Of needleworks, stitches, knots, points, bone-lace, plaits, purles (?), embroidery.

Of leather dressing; viz: soale leather, upper leather, spast[1] leather, whole leather, chamy, buffes, and colouring the same.

Of dying cloth, linnen, cotton, silk, wooll, horne, stones, woods.

Of painting, coulers and oyles. Gums, waters, varnishes, lackers. Tinging[2] metalls, glasses and stones.

The culture of all sorts of grasses; hemp, flax, clover, saintfoin, madder, liquorise, saffron, safflowers,[3] hay &c.

The taking and taming of all sorts of wild beasts, fishes, and fowles; with the maner of feeding and fatning the tame ones.

Of making and dressing and using English Cloth.

Of making all sorts of oyle of beasts, fishes, seeds, olives; of tallow, waxes, lamps, candles &c.

Of watering and drayning of lands, finding springs, and changing the nature [of] soyles and adapting it to beare other plants.

Of building houses—The choice of place according to the country situation. The fitting and seasoning materialls.

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[1] Possibly 'spat' leather is intended.

[2] *I.e.*, colouring.

[3] The plant from which the reddish dye of that name was extracted.

The art of shooting in all guns, mortars, *per* bowes, crossebowes, slings; with the uses and nature of gunpowder.

The Carpenter's, Joyner's, Cooper's, cabinet maker's arts; Turners.

The extraordinary art of Turning.

Typography, in writing, printing, etching, graving, stamping, casting, molding.

Of workes in osyer, straw, wattles.

Of dressing and dying of feathers, or stuffing for beds and quilts: sadles.

Of all earthen vessels for water, fire, ornament.

Of making all musicall instruments.

Of all dioptric and Catoptrick glasse.[1]

Of all glasse works and vessels and glaziers.

Of Taylers, shoemakers and gloviers.

Of Gardening for the kitchen, fruit, and nursery.

Of the trade of horses, dogs, oxen, sheep; as to buying and selling.

A list of all native commodities; from where they come into England, and neare what citty or towne the chiefe manufactures are made and spent; with the season of the yeare for each.

Of all the species of mony, their weights and finenesse.

Of all impostures and legerdemaine, and of all cheats at dice and cards, with the ratiocination thereon or the sequence (?).

Of paper of severall materialls; vellum, and parchment.

Of hats and beaver.

Of perfumes.

Of highwayes, causeys, harbors, molds, moreings.

Of soaps, scouring, size, and starch. Birdlime.

Of all stones for building.

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[1] *I.e.*, refracting and reflecting lenses.

No. 61

Observations of England

Its number of acres, people, and with the Trade thereof.

1. England containing 24 millions of acres requires 120^{m} Cowherds to keep as many Cattle as the same will graze. Who, with a wife for each and 3 children, make up 600^{m}, which is the least number of People that can employ the whole Territory. For there is no other Trade manageth with fewer hands than simple graizeing.

2. There is now in England about 6 millions, or 10 times the last mentiond barely suffitient Number.

3. The said Lands being improvd to the utmost of known Husbandry might victuall, Cloathe, house and afford fire and Candle to 12 millions, or double the number of present people.

4. But by Extraordinary arts of Husbandry, by parcimony and Temperance, consisting with health and long Life, and by getting from neighbour Countries in Exchange of exquisit manufactures and the extraordinary productions of art, England might with Holland and China, maintayn 24 million or quadruple its present number.

5. The Extreme Number of people that any Land can well and comodiously maintayn is so many as what the said can furnish milk, cream, fresh butter, new laid eggs, fresh meat, fish and fowl, Sallett, fruits, gardens of pleasure, meal for Sadle and Coachorses, & which number is unnecessary here to Determine; Though it seems that according to these last mentiond measures England might supply a Citty like London planted in every 20 miles square thereof.

To conclude I take [it] that Land, particularly of England, to be well planted and peopled when there are but —— pasturable Acres for every soul liveing upon it.

6. A man's country is the circuit of Land whose Radius is halfe a days journey from his house.

7. Trade begins when men need more variety of Comoditys than their own home & country can best produce.

8. The People of England come from France; Those of France from Greece; Those of Greece from Asia Minor; and those from the Native Lands of our first and comon Parents.

9. Every Transplantor hath a Trade and Comerce with the people and Country from whence he departed, when the New Country did not yield the same comoditys or manufactures as the old did. From whence it comes to passe that in England wee use so many of the Comoditys that come from Asia &c.

10. England doth not onely use Asian comoditys, but sends out Colonys into such American Countrys as are Asia [*sic*] & where the soyle and vectures are cheapest.

11. Vecture by water is but from $\frac{1}{12}$ to $\frac{1}{20}$ cheaper than by Land *caeteris paribus*.

12. A state is so many coinhabitant people as acknowledge one and the same Soveriegn power, and grow greater and greater from simple famillyes, untill they come to be but 2 in the whole Comerciall world.

13. States or Empires are bounded by seas, by Rivers, Boggs, Loughs, Ridges of Rocks and Garrisons upon Passes, or by flying Armys.

14. Trade encreases when men want or will not be contented without great variety of Comoditys, the product of many severall and remote places, and the work of many various and foreign hands.

We import Comoditys into England for some of these Reasons:

1. Because our Soyl will not bear so good or in so great quantity, or with so little Culture & Carriage allowd.

2. Because our people are not so well practisd or

encouragd or disciplind in the makeing or producing of them.

3. Because (as in druggs) wee are unwilling to make such Experiments as are necessary for substitutes.

4. Because wee would have what is accounted glorious or pleasant by the People of all parts.

5. Because wee have superfluitys of our own, the use whereof would Glutt us, but what wee may Receive in exchange will Delight us.

6. Because wee would Reexport them to others who are not fitted for Vectures.

7. Because wee would store ourselves with the common Comoditys of the whole world—Gold, Silver, Pearls and precious Stones.

No. 62

AN EXPLICATION OF TRADE AND ITS INCREASE

Definitions

Commodities. Are all such Things as men use for necessity, ornament, pleasure, protection, &c. As Meates, drinks, apparell, housing, armes, &c., such as are in a great measure enumerated in the Custome House Booke of Rates.

Trade Is the making, gathering, dispensing and exchanging of Commodityes.

Mony Is the comon measure of commodityes. A comon bond of every man upon every man. The equivalent of commodityes.

Necessaries Are such commodities as without which a man cannot live to the usuall period of men's age in that health and strength as a man is naturally capable of.

Rich Is to have more comodityes than ones selfe can use.

Power Is to bee able to take away the comodityes of another.

Great Men Is to have power over many men.

Soveraign Is to dispose of the powers of all men, and consequently of their Comodityes.

Rich, Powerful, Great in comparison. Is to bee of that halfe in the whole world, or of any soveraign's subjects, or of the inhabitants of any precinct of ground, or of any other species, classes, or denomination of men, which have more Riches or power or greatnes than any of the other halfe.

Labor Is the simple motions of men in order to comodityes, (for) so many houres as hee is naturally able to endure the same.

Skill Is to be able to doe what cannot bee done without much preparatory practise.

Art To bee equall to the labour & skill of many in producing comodityes.

Interest of mony Is what the borrower gives the lender above the principall, for forbearing his mony for a certayne time.

Exchange of mony Is what one gives another, to have the like sum in some other place.

Common price Is the dayes labour of a full growne man.

If men did live like beasts *ex sponte creatis* and did spend them such as they grow, and if there were but one comodity, there could bee no Trade at all. But if commodityes bee various and numerous, and that every man did spend as much of every sort as his interest, labour, skill & power would produce—then Trade would bee extremely great.

Some comodityes are soon destroyed with use, as meate & drink. Others (as clothes) last longer; next furniture; lastly houses, where frugall people had rather bee magnificent in their Houses & Furniture than in clothes & victualls, as the Italians.

(Superlucration—spending and appropriating—servants to spender.[1])

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[1] These were points which the writer apparently intended to develop further afterwards.

But because these 2 extreme states of Trade are but in speculation, they are mentioned but as helps to conceive Trade as it actually and practically is now in the World. Whereof the lowest state fitt for our consideration is that when there were but 3 Trades—one for Victualls, another for Clothes, and a third for Housing; Or rather when Trade was advanced a little further, vizt: when the Trade of food was branched into Tillage of Corn & grazing of Cattle, that of clothes into Weaver, Tincker, & Taylor, Shewmaker and Tanner, and that of Housing in Smith, Mason, & Carpenter. At which pass Trade now is in severall parts of the Christian World.

Now suppose there bee in England 25 million of acres of land and 6 million of soules, and That Trade were as was last described. Then I conjecture there would bee about 100^{m} Tillers of the Land for corne, 20^{m} employed about Cattle, 30^{m} Taylors, 50^{m} Weavers & Tinckers, 15^{m} shewmakers & Tanners, 8^{m} smiths, 12^{m} carpenters & 5^{m} masons—In all about 240^{m}, or $\frac{1}{4}$ of a million of full growne men. Whereas in 6 million of soules there are 6 times as many such full growne men of above 16 yeares old.

Suppose also that all others who are not of these Trades, easily might worke at them, but that there is employment onely for so many as I have named. It seems to mee in this case that all the wealth of the land doth of right belong to the owner of these akers & to the said Tradesmen, because whatever is, did procede from them; and that all the rest, besides the said landlord & Tradesmen, are but servants & dependants upon these. And that withall the Landlord hath a great power over the Tradesmen, because hee hath 6 out of which to choose one, as competitors for the preference.

Wherefore when Trade was thus low the power of the Landlord was higher, and Land was in a manner the onely wealth of the nation.

But when the 2 Trades relating to Food did branch themselves againe into Mowers, Threshers, Millers, bakers, brewers, butchers, cookes; and when the Trades relating to Clothes did branch into wool-combers, spinners, fullers, dyers, hot-pressers, drawers, buttonmakers &c.; and when the other Trades did the like; it came (I suppose) to passe that whereas ¼ of a million did with the land maintaine 6 millions, or one did maintain 24, that now the labour of men so encreasd is equivalent to the land. That is when the employment is so encreased, as that the Landlord must employ all, or at least knowes not whom to leave out. I say in this case That the power of the Landlord and the Tradesman is *in Aequilibrio*.

Againe if Trade shall get further encrease, and that there must bee Divines, Physicians, Lawyers, Soldiers, Seamen to fetch materialls from forraigne parts, & consequently all Trades relating to sea & shipping—nay Trades of pleasure and ornament as Parks, perfumes, jewells, musicians, comedians &c.—then it will certainly come to passe the Powers of these Tradesmen, and the professors of these faculties, will or may as farre exceed that of the Landlords as in the first case theirs did exceed the Tradesmen.

Wee see what encrease of Trade is & the effects of it, which I illustrate againe thus: If men did feed on grasse onely when all would be the owners of that grasse, unto which nothing is added to what the Earth itselfe hath done. But if Trade encrease, that is if men will not feed of all sorts of herbage indifferently, but will select one (namely wheate), and will (to obtayne a sufficient quantity thereof) plough & harrow the ground, which before they did not; nay will eate not the whole plant, stalk leaf & root, but will take onely the seed; nor will they eate that itself raw, but grind it in a mill; and not all the meale, but onely the flower; and that not alone, but mixd with other ingredients; nor those simply mixed & raw, but curiously prepared and baked; & lastly will seperate and chip off a part of that too. It is manifest that this accumulating of operations & Labor and art upon the first and most simple product of the Earth, doth diminish the value of the Land. That is, makes it to beare a far less proportion to the labor bestowed upon it than formerly, when raw wheate or wheate onely boyld or parched did satisfy men's appetites. Hence it comes to passe that the labour of many men is not sufficient to furnish one with elaborate food. And the like may be sayd of Clothes and all other necessaryes; there being a great difference between a raw sheepskin and a piece of Spanish cloth embroiderd, and between a cottage of wattles and a Cabinet-work closett.

Thus may Trade encrease without encrease of people, when men desiring to have great variety of comodityes are contented to take paynes for it, rather than to feed simply and live lazily.

Thus also may Trade encrease without any superlucration;[1] for a man may worke 11 houres in the day to prepare a dish of meate which he may devour in the 12th hower, so as to bee more remote from food than even earth & water. And encrease even of people & Trade, without superlucration, is not encrease of wealth; nor is superlucration of perishing Comodityes, and such as are of a triviall or temporary essence, the best encrease of wealth. But 'tis the superlucration of gold, silver, precious stones, &c., which neither are perishable nor beholding to the change & hurry of times & places for their value, but are morally speaking perpetuall and universall wealth.

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[1] *I.e.*, saving or accumulating of wealth.

No. 63

SOME OBSERVATIONS MADE BY W.P. UPPON THE TRADE OF IRISH CATTLE[1]

1. That the vallue of oxen and sheepe (their hides, tallow and [freight] deducted) which were ever imported in one yeare out of Ireland into England, were never worth above eightie thousand pounds, nor above the hundredth part of the rents of Land of England, [nor] above [the] hundredth part of the butcher's meate yearely spent in England.

2. That Ireland never yett did, nor coulde, spare as many sheepe and oxen, alive or deade, as woulde maintaine a [fifth] part more people than now it hath; that is to say, then would maintaine aboute thirteene hundred thousand people, [of] which number there are aboute eleven hundred thousand [now] in Ireland.

3. Whereas Ireland containes about three quarter as much land as England and Wales, and there bee about six m[illions] of people in England: it follows that, if Ireland cannot furnish flesh meate but unto thirteene hundred thousand, that England cannot with equall plenty furnish meate unto the said six millions.

4. The owners of breeding lands have since the prohibition gotten above tenne shillings per head more for theire cattle [than] before it, which the owners of the feeding lands have [given ?] them and lost. Moreover the mariners of England have [lost] the getting of nine shillings and six pence per head for freight & primage, and the people of England have lost fower shillings and six pence per head more for driving and grazing. The King hath lost three shillings and six pence per head for custome on both sides, besides officers fees, and the traders in hides and tallow have lost what they mighte have gained out of fifteen shillings per head. And the merchants and artizans of England have lost yearely what they

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[1] The margin of this MS. has perished and the words occurring thereon are truncated.

mighte have gained by one hundred and forty thousand pounds worth of English manufactures. The wool growers of England have lost as much, as theire wool is fallen by reason of the extraordinary sheeps walkes now in Ireland. The landlords of Ireland resident in England have lost five per cent. extraordinary for exchange of money. Lastly the bulck of the people of England have lost one half-penny for every pound of flesh meate they have spent, amounting for all England into aboute two millions per annum. Of which grose summe the owners even of breeding lands have paid three times more, even in the inhansment of wages and manufactures, than they gott by the raised rate of their cattle above mentioned.

5. Since the prohibition, the Papists of Ireland (who are eight hundred thousand in number) have gotten a dispensation from Rome to eate flesh five dayes in the weeke, whereas formerly they did but fower; in which extraordinary day of indulgence there is as much meate spent by the papists in a yeare, as ever was brought into England.

6. Although a beast worth fourty shillings might be bought out of Ireland even to London for about twenty shillings, yett the Land of England generally taken is worth five times as much, acre for acre, as the Lands of Ireland generally taken. Neither cann the Lands of Ireland rise up to a levell of vallue with those in England, without the mission of some millions of people more into Ireland than now are there, nor without the expence of more millions in buyldings and improvements than all Ireland is worth. Nor can the Lands of England fall downe to a levell with these in Ireland without vast depopulation and devastations preceding.

Every of the before mentioned particulars cann bee readily prooved from groundes of sence, knowne, granted, or authentique.

(*Endorsed.* "Irish Cattle—for urging it a disadvantage to England.")

No. 64

CONSIDERATIONS CONCERNING FORAINE TRADE

1. The said Trade may bee conceivd to bee divided into 3 parts, vizt:

The first to comprehend the Commerce between the King of England's Dominions of Great Brittaine and Ireland, and the Islands thereunto belonging; of Denmark & Norway, Southward of the Naas & Westward of Ireland; of the Swedish Territorys with the Baltick; of the Coasts between Dantzick and Lubeck; of the Coast between Gluckstat and Oestend; of the Coast between Dunkirk and Bayone.

The second part to containe all Spain and Portingall, and all coasts within in the Mediteranean.

The third part to comprehend all the Coast of Africa, from Tangier without the Mediteranean, as also of Asia, America, with Greenland, Iceland, & Russia.

2. Whatever Prince or State can perfectly command the Line between the Isle of Wight and the next land of France, and between the Naas of Norway and the next Land of Scotland, may bee justly stiled masters of the seas within the said Lines, and of the commerce driven on the same. But the King of England is master of one end of both the said Lines, and the Kings of France and Denmark of the other ends. So the King of England may bee esteemed to have Right to half the said Interest & Dominion.

3. The King of England, France, and Denmark are all monarchs and (parts put together) seeme to have half the shipping and seamen, which belong to the first division of Trade above mentioned.[1]

4. The Charge of keeping and defending the said two Lines hath been computed at 400^{m} pounds per

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[1] *Cf.* Petty's estimates of the shipping and exports of these countries in the *Political Arithmetic* (Hull, 201-2).

annum; whereof the King of England is to bear one half, and the Kings of France and Denmark a quarter each.

5. It may seem reasonable that the King of England and France may equally divide the Trade which is between the first and second Division.

6. And that England, purchasing the Portingalls Interest in the East and West Indies, and withall getting High Spaniol and Cuba, may fairly pretend to the whole Trade between the first and third division; and consequently obtain $\frac{2}{3}$ of the Trade of the whole Commerciall world, which is hereby propounded to bee gotten, consonant to their pretence of being Soveraine of the Seas, and of their being master of one end of the two important Lines above mentioned.

How to defend and make good the said two Lines.

1. Wee propound the mooring of a convenient vessell at every mile distance, to bee mand with 10 men, with signalls of fier & flaggs, whereby (by way of Beacon) in a very small time to give notice from one end of the Line to the other of the number of ship or ships which they discover, the precise time of their first seeing the same, and the distance from the next Boate whose place is understood and knowne beforehand.

2. That there bee a force of shipping at each end of the said Line, allways ready to saile; each to bee mand at least with 500 men.

3. That other shipping of Force, bee at 2 Leagues distance upon the said Line, or at every 6th Boate.

4. That there bee a moving fleet or fleets of ships, always ready within the said inclosed seas, to wait upon any force which shall endeavor to break the said Lines.

5. That advice boates ply to and againe on each side of the Lines.

(A description of the severall vessells usefull to this purpose and of their severall moarings, sayling and signalls.[1])

(*Endorsed.* " Of the Sea Trade of the whole world.")

No. 65

DOMINION OF THE SEAS

Ch. I

The Words *Soveraignity* & *Empire* doe signify even as Large a Power as Mr. Hobs attributes to his *Leviathan*; That is to say, a Power & Right of doing all things that are naturally possible.

So as *Empire* in & over any certaine scope or circuit of ground, whether dry or covered with water, signifyes a Right & power over the Lives, Libertyes, & fortunes of all that Live within the same, and a right to all Things beeing or produced therein.

Dominion over the same Land or Ground, signifyes onely such a Right as Landlords have to their Estates of Inheritance; that is to say, a property against all their fellow subjects, but not against the Soveraigne Power aforementioned. So as the *Dominus Maris* hath the same right to all the fish & other production of the seas, as any Landlord hath to the Corne & Cattle accrewing from his Lands; and it is the same Trespasse to passe over such seas as have a *dominus*, as to come upon the Lands that have a knowne owner, Lord, or proprietor.

But as the Soveraigne Power (over the said Landlords) doth allow all men a way to Churches, Coasts, markets &c., through the Estates of particular men, and as some kind of allowance is made to every man to take fish & Birds on particular mens grounds &

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[1] This part of the subject is not further developed in this paper, but elsewhere amongst the MSS. there are descriptions of various sorts of vessels suitable for this purpose.

waters, with certaine limitations; so others besides the *dominus maris* may have the same allowances in the sea of passing through it, or of taking the fish Living within it, or the birds flying over it; but all according to the distinctions & Limitations which the Soveraigne of the said seas doth prescribe.

Now I doubt whether Those who Strike their sayles or take in their flag, do thereby acknowledge that the owner of that flag to whom they thus submitt, hath the *Imperium* & *Dominium Maris* above mentioned. Or whether They, Believing that God alone hath or can have such a power, do onely acknowledge that hee to whom they strike, hath onely a greater share thereof than themselves; that is to say, *Imperium* & *Dominium* over more & more frequented seas, or the said *imperium* with fewer limitations & Restrictions. Or whether their owne power bee subordinate & derivative from, or by compact with, the power they strike to. Or whether it signify that the forme of their owne state & government bee lesse honorable then the forme of his to whom [they] performe that respect. Or whether the flag bee a mere ceremony, signifying little more then a signe of charity & amity & good will, such as putting off the hatt, or saying ‘ your servant ’ is in these parts of the World; which are ceremonyes done by inferiors to superiours and vice versa almost indifferently, & where the marks of Inferiority are not well ascertaind.

In the next place, It seemes to mee That who is *Dominus Maris* may *eo Titulo* clayme *dominium* in & over all the Navigable Waters of the whole which have communication & Interfluence with each other. For although there is nothing more common than in Talk to distinguish between seas & fresh water Rivers, yet when we come to draw Lines from one permanent & conspicuous Mark of the one side, to the like Mark on the other side of any Navigable water, I do not know There are any Rules in Nature for doing thereof such which may oblige the whole world; nor so much as

Statutes or agreements of people for determining the same. Nor hath even the navigating nation of England got such marks so much as in their owne 2 greatest Rivers, the Thames & the Severne.

As for example If wee would distinguish the Sea from Rivers by Saltnes. 1. Wee shall find no 2 tests to agree upon that signe. 2. The Salt waters of the sea intrude further upon those fresh rivers of the Land at one time then another. 3. There may bee saltish Rivers & fresh Seas in the world enough to disable this manner of distinguishment. Especially when matters of great value & Importance shall depend thereupon.

Againe if wee endeavour this distinction by the Limits of Ebbing & flowing, accompting all Waters which have that reciprocall motion to bee sea: (1) wee shall find waters called seas wherein those motions are very obscure & small. (2) Waters Ebb & flow differently according to winds & other accidents; besides their monthly & annual differences, & besides those more slow changes where the sea gaynes on one shore & looses on the opposite.

Lastly if wee would goe about this water by narrowness or depth: Wee shall find very salt water passe through very narrow *fretums* & salt water to bee fordable, & on the other hand waters perfectly fresh to bee very broad & deep. Besides the differences of passablenes, which arise from the sides & bottomes of the waters in question.

Now if we can find no Rules in Nature but must fly to Statutes, Charters & instances, The same can onely oblige the few which made & accept them, not the world; & consequently not prevent wars & bloodshed between the severall nations that think it their interest to contend.

As 'tis usual to talk of Seas & Rivers, soe In all our Maps wee find the names of *Mare Hibernicum, Mare Brittanicum, Mare Germanicum* boldly inserted, & our Lawes do talk of things done *inter* or *intra quatuor*

Maria.[1] Wee also find mention of the Deucaledonian, Atlantic, Oceans &c. But I do not know That by the Consent of Nations & Princes (to bee found in like Records remayning with or Indented between each of them) That there are Permanent and Conspicuous Marks agreed upon on each side, between which as the Term *a quo* & *ad quem* Those lines of determination shall be drawne: Vizt, From what visible Rock at Dover to what like marke about Calais, the Line shall be drawne which divides the Brittaine from German Sea; From what points in Wales & Scotland to what points in the South & North of Ireland, the 2 lines shall be drawne which with the shoares on each side doth enclose the *Mare Hibernicum*; Much lesse do I find what lines distinguish the Brittish Sea from the Westerne Ocean, or the German from the Deucaledonian &c. Or, if such lines were fixed, can I conceive how one out of the sight of Land can certainly know when hee is in them; so as to determine the controversy whether a ship of 100^{m}£ value were prize or not —If she were prize taken within, & not Prize if taken without the said lines of fixt termination.

For I can think but of 3 wayes of doing the same, The first whereof is by latitudes & longitudes. The former whereof is not knowable at sea within lesse than 20 English Miles (& that too but when observations may be taken); & the latter scarce at all, otherwise than by conjecture from Clocks, which do not goe at sea sufficiently for that purpose. The second way is by sounding, whereby the depth & nature of the ground is discovered. But forasmuch as there may bee playnes in the bottome of the Sea of many Miles in Length, as also Sudden & frequent Inequalities in the Same, no certainty can bee hoped for from that help. The last is what men call 'dead Reckoning' by Rhombs & distances protracted on the Card. But for as much as no man can steere neerer than to $\frac{1}{2}$ a point; for as much as every ships Course is disturbed by Tides, Currents, & Leward way; forasmuch as the Log & Line is no certayne measure of distance, for that the variation of the needle to observers sayling Long Runns from severall ports; for as much as Chartes are not enough or equally true, & lastly for that a Long Reckoning shall by its accumulation of Errors differ much from a short one—I say for all these Reasons that Dead Reckoning is not to bee relyed upon where 100^{m}£ is in question. For either part will appeale to Blood & blowes rather than acquiesce in the finest conjectures, when such a Wager lyes at Stake.

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[1] The *Quatuor Maria* presumably were the three seas above mentioned with the *Deucaledonian* (*infra*), which Blaeu's map shows as being the part of the Atlantic on the north-west of Scotland.

We have sayd that neither Seas from Rivers, Seas from Seas, nor Seas from Oceans, can bee distinguished. It follows That Lands from Shores, & Shores from Coasts, are not distinguished by much more satisfactory meanes of certainty. As for the Shoare, I take it to bee ground reciprocally shewing itselfe and appearing as Land & Sea; That is to say a girdle of ground comprehended between the high & low Water marks of an Ebbing & Flowing Sea. Now how this girdle strengthens & widens itselfe every day,—by the interscesion of winds & Land floods, by the new & full moone, by the seasons of yeare, by the firmnes & loosenes of the Earth upon the Shoare & from some obstruse causes also,—is well knowne to every observer.

Nevertheless The Limatation of Shoares is much more certayne than that of coasts, where certainty is more desirable & needfull. For I take a Coast as that part of Sea without the Low Water mark to sea-ward, which by some kind of natural Right belongs to the paralell and Adjacent country washed by it. As for example our endeavor now is to answer this question: How many Miles broad is the Coast of England, or of any part of it, as of Dorset shire Devonshire &c.? To which I offer & propose the severall following answers, vizt:

1. The Coast of Dorsetshire extends from lowe

water mark unto halfe the shortest line between the shoare of Dorsetshire & the shoare of opposite France.

2. It is the distance from the shoare where the convexity of the sea terminates the sight of one that standeth on the ground, or of an eye 6 foot above the ground.

3. The distance at which the biggest ship (suppose of 1000 tons) can bee seen from the shoare.

4. The distance at which from the tallest ship, the next land may bee seen.

5. The distance unto which an open boate of certaine dimensions dares go a fishing into the sea.

6. The distance from the shoare into the sea at which the best Gun can shoote with effect.

7. The like distance with respect to a Musket or the Biggest bullet Instrument That the strength of a man can wield & use.

8. The distance at which from sea, a man or other the biggest animal, can bee seen to move on the shoare.

9. The distance a man on horseback can ride from low water mark into the sea, & throw a dart, shoot an arrow or bullet out of such a gun as hee can carry thither.

(All which distances and dimensions of a coast will bee longer & shorter according to severall accidents & circumstances easily conceivable without further mention.)

10. The distance from the shoare untill no ground can bee struck by an ordinary deep sea Lead.[1]

So as what is meant by the Shoare of France, Upon which an Englishman may not fish (or Vice Versa) without breach of the peace, is unknowne to mee from any thing I ever yet read or have heard discours'd, even by persons concern'd (even to blood) in these matters. Wherefore I humbly conceive it a Calamity, nay Rudenes, babarise & Incivility to ground the causes of war & bloodshed upon what hath no ground in sense, [or] upon naturall comon & universall reason. Since the preservation of Man's life & goods & property seems to be the very end of all lawes & of the whole end table of the God's owne Decalogue.

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[1] Petty's attempts to define (*circa* 1680) what is meant by 'coast' are interesting in view of the recent controversy as to the 'Coast of Labrador' between Canada and Newfoundland. The dispute hinged on a document of 1763, and the Privy Council decided that the word coast as therein used meant the entire coastward watershed—a far wider interpretation than any suggested in this paper.

Chapter ii

Since the late & former Lawes of England do not onely mention Empire & Dominion of the Seas; since The Kings of England have many yeares insisted upon the acknowlegement of the same, or of something like it; since wee find the duty of the flag granted by the sea-potent Hollanders to his Majesty of England;[1] since wee have had ships called 'The Soveraigne of the Seas' in order to assure them the Right; since our Learned men have so bravely from Treatys, Records, &c. asserted that our clayme; since the greatest Potentates do but faintly evade it; since the dutyes of Tonnage & Poundage (worth in all his Majesty's dominions nere 1000^{m}£ per annum & sufficient to keep above 20^{m} men at Sea in good equipage) was given by the Parlament to maintayne that honorable pretence;—I say that notwithstanding all the uncertaintyes in the last Chapter mentioned, There is some such thing as a Dominion of the seas, & that belonging to the Crowne of England. Wherefore the end of this ensuing chapter is to shew how the same may be practically understood & exercisd by all parties concernd; submitting whatever I shall say here-upon to authority, the Lawes, Customes & the judgements of reasoning & Inquisitive Men.

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[1] The salute to the flag by other nations in the English seas had been abandoned under James I, but was stipulated for in the Treaty concluded with Holland in 1674.

My first position is that Seas & Navigable waters may bee sufficiently limited by sensible marks, in order to a reall & intelligible dominion in & over them. But note (1) That we exclude all waters from whence no land can bee seen, & where no ground can bee found with the usual deep sea leads or cables—at least until the art of finding Longitudes & Latitudes bee better emproved. (2) Note, that distinction between seas & Navigable rivers is neither Easy nor necessary, & therefore omitted also in this Essay. (3) I allow for 'Coast' the distance at which any animall on the Shoare may bee seene to move from the Sea. Over which coast & shoare between it & the Land I do not suppose the *Dominus Maris* to have any Dominion at all, no more than over the Land Itselfe. The reasons why I pitch upon this definition of a coast (rather then any of the other 9 aforementioned) are these: Because this coast is but small & the same seemes naturally necessary for a passage & competent fishery. Because The coast according to this rule cannot well bee above 3 miles broad, & cannot differ above a mile or 2, in & according to all the usuall & ordinary variety of acidents & differences in Sight, medium, & object. This rule differs not much from the distance at which the largest & best guns may hurt or do some execution. The other rules may differ twice or thrice (nay 10 times) as much from themselves, as the whole coast by the way I have pitcht upon can ever bee.

These things being premised, The Seas may bee Limitted by boates of about 20 or 30 tons, built in a peculiar shape, & moared by Long cables or warps of a competent length for their secure riding [in] all weathers in deep waters, & to bee placed at about 3 leagues distance from each [other]; so as they may easily (at least by glasses) see the figures, which they shall have occasion to make unto each other for the reasons hereafter to bee mentiond. The charge of these vessells & their moarings I conceive may bee within 150£ each, & the charge of mantayning 3 men upon each may bee about 150£ per annum. So as every league of sea which is to bee enclosed & limitted by the meanes aforementiond, may cost 50£ principall & about 50£ per annum. At which rate, to enclose the sea from Cape Clear in Ireland to Scylly, neere the Lands End of England; & from thence to Ushant in France; & moreover from the Isle of Raghlins[1] in the North of Ireland to Cantyre in Scotland; from Schetland north of Scotland to the next land of Norway, viz: Cap Van Staten[2]; & lastly from the Naze in Norway to the next land of Jutland in Denmark;—together with 3 cross cuts, the one between Dover & Calais, the other between Yarmouth & Texall, & the 3d between the Isle of Wight & Cape de la Hogue in Normandy, making in all under 200 Leagues—may cost about 10,000£, & 10,000£ per annum[3]; vizt: scarce $\frac{1}{100}$ part of what it hath always cost the King of England *communibus annis* to make good the soveraignty of sea; Which is no more Then in order to a building of 10,000£ value, to bestow about 100£ in draughts, modells & other drawing. This enclosure contayneth those seas over which His Majesty seemeth to have, may, or ought to have dominion; which were it well established & secured, the Dominion of the Baltic must by consequence follow.

Now forasmuch as his Majesty demandeth the flag from the Cape Finisterre in Galicia as well as in the seas above limitted, It onely remaynes now to conceive how the same may also bee intelligibly answered & complyd with. Which I suppose may bee, If the flag bee given from the said Northern Cape in Galizia, all along the Coast of Galizia, Biscay & Aquitaine, So far from the shoare from which the Land can bee seen; or where soever the ground can bee struck, between the latitude of the said Cape Galizia and the Cape Van Staten in Norway; viz., from about the latitude of 44 degrees to that of 64—Concerning which there can be little difference, the Medium of the last observations made in both ships beeing the Rule. So as this Line of Honor would run all along by the coast of Biscay and Aquitaine (in the outward & Westward side of the Boundary-boates above mentiond) and so on the back or Westward side of Ireland, & Westward of the Hebrides & Orcades,[1] up to Schetland; Latitude, sight of Lands, and Soundings, being the rule & guages of it.

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[1] Rathlin Island.

[2] I cannot find this cape even on the maps of Petty's time (Blaeu, Speed, etc.), but it was evidently just opposite the Shetland Islands, where there is still a district called 'Statland.'

[3] But *cf.* p. 242 *infra*, where the calculation is for a much larger number of boats, and the cost more than double.

Having thus ascertayned the Limits of a sea or seas capable of and lyable to Dominion, as also Layd downe how, even without the sayd Circuit, The flag may bee demanded upon sensible grounds, viz: every[where] Westward of France, Ireland & Scotland, or between the latitude of 44 & 64 degrees, Where either ground can be struck by the Lead, or where the lands of Biscay, France, the boundary boates, Ireland or Scotland, with the adjacent Islands can be seene. Whereby provision is made both for cleere & thick weather; nor is the want of celestiall observations any thing, since the medium of the last observations made by both the meeting ships is in this Case to bee the Rule of Situation—Having I say thus ascertayned the premises, Wee come next to describe Empire & Dominion by sensible marks & limitations also, vizt:

First. That no Ship carry out her Ordnance within the said enclosed Seas, nor carry any at all if her Voyage bee terminated within the same. The Lord of this Sea taking care for the Common Safety of all from the Victories & Injuryes of each other.

2. That the right of fishing every where within this

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[1] The Orkneys.

enclosure may belong to the Lord, excepting the Coasts of each Country described as aforesayd.

3. That all wrongs between the Subjects of different Nations, comitted upon this *Mare Clausum*, bee tryed in the Admiralty Court of the Lord. Wrongs comitted between the subjects of the same Prince or State being left to their owne Princes respectively, & wrongs between the subjects of the Sea Lord & other Princes, to bee tryd in the sayd Lord's Admiralty by Judges halfe Strangers. From whence it follows that the signification of the flag is the acknowledgement of all & singular the premises. Whereunto I ad, That I do not say that all this is due unto any person, nor can I say the Contrary; but my meaning onely being to prove That there may be a Reall & Intelligible dominion of the Seas, and consequently That the Sea & its produce may bee appropriated.

It remaynes now to shew That such a dominion and property ought to be instituted and ascertained, for the common good & peace of all pretenders & aspirers unto it. To which purpose I say: 1. That without this establishment the Kings of Brittayne, Ireland, Denmark, France & Spayne, as also the States of the United Netherlands & of severall Hanse Townes, are, as to sea-affaires, in the State of Nature; and there is *bellum omnium contra omnes* between them and their respective subjects about the right of passage, fishings & Jurisdiction, & the use of armes upon the said Seas. Whereas If all and every of them did transferre their Rights into some one of their Number, Peace & profitt would ensue. So as even those who should relinquish & transferre their power, should bee protected at lesse expense and danger than now they are at. As for Example, suppose a million per annum were requisite to protect the navigation & Trade of all those who dwell upon the severall coasts of the sayd *mare clausum*. Who doth not see That it were better for all the Princes to trust one who is best qualifyd for it, and neither of them to take more care than to pay his just proportion of the sayd Million, Then that each ship should bee forced (besides seamen) to carry as it were soldiers, armes, & ammunition, for his owne particular protection, which can bee but against piccaroones of lesse force than himselfe? I do not doubt but the freight of shipping within the Enclosure above mentiond is above 4 millions per annum & that at least $\frac{1}{3}$ thereof is spent in defence, & consequently amounts to much above a million, whereas in the way proposed lesse [than] a million might suffice.

2. As to the fishery. Forasmuch as the value of all the fish *inter communibus annis* within that enclosure is not one million per annum, and what is cleerly gaynd thereby (above what might bee gayned at any ordinary trades) is not 50,000£ thereof, It followes that the *Dominus maris* could not reasonably ask 30,000£ per annum for license to fish. Now the question [is] whether It were not more profitable for all the fishers of all nations fishing within this enclosure to pay so much, than to make provision each in particular for his owne defence, both at his work & in his way to market.

3. As to Jurisdiction. How much better were it to have all causes tryed before Indifferent & Unconcerned Judges than by partyes. For it comes to passe that, for want of a comon *Dominus Maris*, There is so much partiality observd to bee in our Admiralty Courts, that a ship were as good bee sunk as to come into them,—as the Proverb has it. And this I take to be sufficient for proofe that It is the comon Interest to have a Comon *Dominus Maris*, and that the rights of severall pretenders transfer'd upon him, would be more for each man's comodity than whilst (as now) they remayne to himselfe.

Chap. iii

That the King of England hath not onely right by ancient customs & by Treaties with Neighbouring nations to this dominion, But hath also more Naturall Right & better qualifications for the same Then any of the Princes & States who have shoare within the Enclosure aforementioned; and consequently hath good pretences to the flag from the Northward Cape to Cap Van Staten, mentioned in the late Treaty with the Hollanders—whatsoever the meaning of that Treaty may bee or whatsoever construction may bee putt upon it.

I take it for good, That his Majesty's Right to the Dominion of the Seas, depending upon the Atchievements of his ancestors & the concessions of his Neighbors, as the same appeares in ancient Records & Treatyes, hath been sufficiently asserted by severall Learned Antiquaryes & Lawyers who have undertaken the same. And Therefore, wholly omitting to repeate their Arguments, I rather superadde others depending upon principles in nature, vizt:

Supposing as aforesayd That the *Mare Clausum* wee intend, bee the seas comprehended within a Line beginning at the Isle of Scilly, passing thence to Cape Cleere in Ireland, from thence by the back or West of Ireland to the North Westernmost point thereof, thence by the Hebrides Westward to Schetland, thence to Cape Van Staten, thence to the Naze of Norway, thence to the next Land of Jutland, thence to the Elb's mouth, thence by Holland, Zealand & Flanders to Calais, thence to Hey Sant Is.[1] in Brittany & thence to Scilly, where wee began. I say:

First, That the King of England hath neere thrice as much shore as the King of France, Spayne, Denmark, the States of Holland, with the Townes of Hamburgh, Embden, & Bremen, putt altogether do possesse. And if the Baltic Seas were added (The Sinus Bodicus[2] excluded, lying without the Latitude of Cap Van Staten), as much as all the Princes & States aforementiond (adding the King of Sweden, Elector of Brandenburg, with the Towns of Lubec & Dantzig) also have—Nay, if the Bay of Biscay were also added to this enclosure The King of England hath more shore in all the 3 severall enclosures above mentiond then any 2 of the first named Princes who have the most, or can have, within the same.

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[1] Isle d'Ouessant, Ushant, off Brest.

[2] Gulf of Bothnia.

2. The Isles of Great Brittaine & Ireland doe lye about the Middle of the Line of Trades, Extending itselfe from Archangell in Russia round about by Ireland to Tangier, and thence through the whole Mediterranean sea to Constantinople. More over, Ireland & England stand in the face of the New American World which doth already, & will every day more & more afford a Vast Trade. Nor have France, Spayne & Portugall, which also have the same aspect to the new world, halfe so many Ports & Conveniencyes for this New World's Trade, as the King of England's Countyes have.[1]

3. About $\frac{3}{4}$ of all ships trading to East Indies, Guiny, the Straights and America, must passe in their voyage thither, either between Scilly & Hey Sant or between Scotland & Schetland, or between Schetland & Norway; All which passages wee supposed may bee enclosed as aforesaid, and as shall hereafter bee better explaynd. Moreover the great Magazine of Navall provisions as Timber, plank, board, Iron, Hemp, Masts & Tar, as also of Corne, must have vent through the same passages.

4. The great fisheryes of the old world, particularly that of herrings, & the Indies of the Hollanders, are within the chiefe of these 3 enclosures; and within the same is the greatest market & consumption of all the French bulky comodityes of wine, brandy, salt,

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[1] Petty here shows how just an appreciation he had of the fundamental advantages possessed by England for the development of maritime supremacy. (*Cf.* Trevelyan, *History of England*, Introduction.)

paper & fruites. More over, over against this Enclosure is the greatest fisheryes of the new world, namely about Newfoundland; & lastly through the aforementioned passages must the Greenland & Muscovy Trade bee managed.

5. The King of England and his subjects have already more shipping of Warre & Trade Then any 2 of the Princes aforementioned, the States of Holland onely excepted; but hee hath 4 times as many subjects as that state hath, who when they find it their Interest to look after the dominion of seas, may also beare the same proportion to the Hollanders in Navall strength also.

6. It hath been elsewhere shewne that the King of France is or may bee superior to the King of Spayne in Navall force; but without that, the King of France is under Naturall & Perpetuall impediments of ever being as powerfull at sea as either the English or Hollanders now are.

7. The Scituation of Denmark & Sweden is such in Comparison of Great Brittaine & Ireland with respect to this dominion, That the English can do more towards it with 2 then they can with 4. Nor are the Danes & Swedes any thing as to this matter, unlesse they could bee alwayes as one, with which the likeness of their Interest will seldome suffer them to bee.

8. Great Brittaine & Ireland are under an absolute necessity to bee strong in shipping & sea-soldiers, to defend themselves from foraign Invasion, which soldiers are also best for suppressing any intestine commotions amongst themselves. Now 60^{m} men at sea is neere treble the force that ever any Enemy appeared with against England, and yet may bee maintayned with $\frac{1}{16}$ part of the expense of the King of England's subjects. The raising of which $\frac{1}{16}$th part can bee no sensible pressure upon his subjects—Since few can discerne the quantity & quality of the commodityes they spend & use within $\frac{1}{16}$ part of the same. Wherefore If, as was shewne in the foregoing

Chapter, It bee the Interest of all Princes & States who have shoar within this enclosure, to transfer their Power to some one of their number to prevent *Bellum omnium contra omnes* concerning the same; And since the King of England hath already so faire, so probable, & so ancient a pretence to this power, which neither hee nor his subjects will ever quietly part with, I conceive that It is the Interest of the said Princes (for the said additionall arguments above mentiond) to confirme the said power and authority unto him without further trouble; which doubtlesse his people, seeing their right & Interest therein, can otherwise force them unto.

As an Appendix to this Chapter, Tis not amisse to conjecture the severall constructions which may be put upon the Hollanders being oblig'd to give the flag between the Cap Van Staten to that in Galizia aforementioned, viz: 1. Some thinke That the Hollanders are bound to strike in all places of the world betweene the paralells passing by both these Capes; that is not onely in the bay of Biscay, the Brittish, Irish & German Seas, but also in the Westerne Ocean, the Baltic (excepting the Sinus Bodicus), but also even in the seas of China & Tartary.

2. Others think That The Hollanders are bound to strike within that space of the seas comprehended between the Meridian passing by the Northern Cape in Galizia, and the paralell passing by the Cape Van Staten on the West & North, and the shores of Biscay, france, the Netherlands, Denmarke, & of the Baltic Seas on the South & West.

3. Others say (more geometrically) That They are to strike in the seas comprehended between the Meridian passing by the Cape Van Staten & the paralell passing by the Northern Cape of Galizia.

4. Others say Tis onely within Sight of Land of all the shores between the said 2 Capes.

5. Others more rationally say tis in all places

where the ground may bee struck between the paralells passing by either Capes.

6. Others within the space comprehended between the paralells and meridians passing by both Capes.

7. Others say tis onely in all places, within the last mentiond space, from where the King of England's territoryes can be seene.

8. Others onely where his Guns can doe execution within the said space.

9. Others say onely within the said last mentiond space where the English Guns do really more execution than those of the Hollanders.

10. Others The Seas between the Meridians of both places, from pole to pole.

So as Tis Manifest the said limitations can onely encourage those who think themselves strongest to put some sinister Interpretation on the Treaty, & to do the like concerning the signification of the flag; which some would have an ordinary salute as aforesaid, such as inferiors give Casually to Superiors Indifferently [or] promiscuously & vice versa, & such as is not worth the expence of 15 millions within these 25 yeares to contend for, & such as is not proportionable to the King of England's ancient pretence & the visible Interest hee now holds in the Lands & Seas which the Hollanders visitt & passe through.

Chap. iv

Contayning the Computation and ballance of the profit & losse accrewing to the Crown & people of England by the dominion of the Seas.

In this Computation I understand by the 'Sea,' onely the Enclosure above mentioned, excluding the Baltic & the bay of Biscay, though the Treaty with the hollanders (made anno 1674) seems to comprehend them. And by 'Dominion,' I understand not the duty of the flag otherwise, than it signifyes Right of passage & Contrary, Right of fishery & other productions of the sea, & right of Jurisdiction in all that sea,—excepting on the coast & shoare of each country measured by the reach of a man's Sight or Ken from the sea of any Animal moving on the Shoare or next Land.

Wherefore the questions are: 1. What is [the] charge per annum of guns, amunition, & other habillaments of war, and of men other than marriners necessary for sayling, which all the shipping is at *Communibus Annis* which sayle to & againe through this enclosure; & for how much lesse England could equivalently protect the said shipping by their armes and the authority of their dominion? 2. How much is all the fish taken within that enclosure worth, more than the same cost the takeing? And how much is that profit greater than is usuall in other Trades requiring the same stock, Ware & Tare, & Ensurance? 3. What may bee the Expense of all the Admiralty causes hapning between severall nations, according to ordinary & moderate fees, without extortion or briberyes?

And on the other hand the Questions will be:—What it may cost England to purchase & settle this dominion? What will bee their *Lucrum cessus* and *damnum emergens* whilst they are about it? And lastly what the Annual Charge will bee of maintayning & continuing it? All which questions being new, unlimited, depending upon many future Contingencyes, and requiring such helps & accompts as the world are not yet accustomed unto, I cannot promise much in the solving of them; but do in Charity venture my Reputation upon these Wild difficultyes for the good of my country, really submitting my endeavors to the review & Correction of every candid undertaker.

But first, by way of digression, I think it reasonable That if the Dane & Swede in conjunction, or either of them without or against the other, could enable themselves to protect all shipping in the Baltic, that the same dominion bee allowd to him or them there as is propounded in the English Enclosure. Moreover, If the King of france, The King of Spayne, & Duke of Tuscany, could arrive to the like power in the Mediterranean, from the Straights mouth to Malta, That the same bee allowed him also; & the like to the Commonwealth of Venice for the rest of the sea to the Dardanelles leaving the Pontus Euxinus, Palus Moeotis[1] &c. to the Grand Signior; Each of which may distinguish their respective enclosures in the same manner as was sayd concerning that of England. For, as I sayd at first, It were for the peace of the world that each enclosed & tradeable sea should have his proprietor as well as the Land. Nor is the one much more impracticable than other, As to experiences is manifest upon the practises of severall states & kingdomes of the world, especially when the territoryes are Wast & Uninhabited, in Muscovy, Tartary &c. Nay the Lands of severall gentlemen & familyes had not till of late other bounds & meers than the power of some garrison seated on it.

But to return from whence I digressd, If other Princes would attempt to make the same enclosures & appropriations of the seas as the King of England may by severall Titles doe, Then the opposition of other princes would bee the lesse towards him, and Consequently his damage & Expence thereupon (which we are now to compute) would bee the lesse. In the Meane Time Tis almost a Miracle that the Hollanders, who have not above 2 millions of subjects & few naturall helps or Titles to this Dominion, should have proceeded so far as they [have] of late done to compasse it, not onely about home but almost every where abroad also in some degree or other—so great is the power of Industry. I say againe If the Dane & Swede should attempt the like dominion in the Baltic, and the French and Spanyard in the Mediterranean, Tis likely they would not oppose the King of England;

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[1] The Black Sea and Sea of Azov.

whereby hee should onely have the Hollanders, Hamburghers, and few others of lesser power to contest his enterprize. Nay hee would have them to oppose the Hollanders by hindring their usurpations in the Baltic & Mediterranean.

I say the profits arising from the Dominion of the seas are but 3, vizt: (1) That of convoyes of all vessells passing through the enclosure, which must not bee more than they now pay. (2) The Rent of the fisheryes. (3) The Emoluments arising from the Admiralty Jurisdictions. Now how much each of these is must bee our Inquiry.

To find the first: My first supposition is that there are not more than 20,000 seamen employed upon all the merchant shipping of England, Scotland, & Ireland. 2. That more than 4 tymes so much shipping doth not Ordinarily trade through this enclosure. 3. That the charge of guns, ammunition & Extraordinary men for the defence, is about $\frac{1}{8}$ of the whole freight. 4. That the freight of the shipping mann'd by 20000 seamen is about 800,000£ per annum. From all which data (for each of which I have competent grounds, & for some of them too good proofe) I inferre That the freight of all the Shipping passing yearely through the Enclosure is about 3,200,000£, the $\frac{1}{5}$ part whereof is about 630,000£, or the sum which the said shipping may afford to pay for their reall protection in their respective Trades.

As to the rent of the fisheryes. My data are these, vizt: 1. I know severall fishing places for pilchard, Herring, Cod &c. let for 10£ per annum where perhaps 200£ worth of fish is taken *communibus annis*. 2. There are not in all Ireland 100 of such fishing places. 3. The fishing places of England & Scotland are not 10 times better than those of Ireland. Wherefore The Rent of the whole must not exceed 10,000£, nor the fish taken in them bee worth above 200,000£. Unto which sum may be added as much more for the fishing upon banks remote from the coasts which are within the Enclosure. So as the whole fish [we] may estimate at 400,000£, and the rent of the fisheryes (which is the sum that can bee earned more by these fisheryes than by other ordinary Trader) is about 20,000£ per annum. Now this estimate agreeing well enough with the sober Accompts Wee have of the Hollanders fishing Busses (The which being about 800 & Mann'd with 8000 men, & each of them taking 40£ worth of fish in a season, makes in all 320,000£ worth of fish, besides the 200,000£ worth taken elsewhere & by other hands) I offer for tollerable. But let this Rent bee 25000£ per annum, Nay 30^{m}£, nay 50:

Lastly for the gayne to the Nation by the beeing and holding of an Admiralty Court for all Causes hapning within & upon this enclosed sea. Suppose the same bee 4 tymes as much as emoluments, fees & perquisites arising from our present Courts in England, vizt: 40000£ at most in a faire & open way. So as the country money being 630^{m}, the Rent of fishery 30^{m}, & the profits of the generall jurisdiction 40^{m}, The 3 sums put together make but 700^{m}£ in all.

Having thus estimated the Gayne of the Dominion Wee talk of to bee about 700^{m}£ per annum, It followes to compute the charge of deserving the same. To which purpose My data grounds or sugestions are. That in the 6 yeares of war with the Hollanders which have hapn'd since the yeare 1660 upon this matter, & for a lesse consideration than the above described Dominion, The whole Navall Expence hath been more than 6 tymes 700^{m}£, or 4 million 200^{m}£. For that some say the whole Navall Expense, Ordinary & Extraordinary, within the said 6 yeares hath beene nearer 10 millions, or double the above mentiond sum of 4,200^{m}£. Agayne I suppose That about 15,000 Seamen & 10,000 Landmen were, one time with another, employ'd on that service. Now the charge of a seaman with all appurtenances is estimated to bee 50£ per annum, and of a Landman at least 20£ per annum. According to which rates the whole Annuall

Charge must bee 750,000£ for the Seamen & 200,000£ for the Landmen—In all 950,000; & for the 6 years 5,700^{m}£, besides the ordinary & that of building new ships.

But if the 25,000 men abovementiond have purchased (as appeared in the Treaty made with the Hollanders anno 1674) but the duty of the flag between Cap Van Staten & that in Galizia abovementiond, without any certayne or cleere signification of the same almost in any one circumstance or particular, What will it cost more & what number of men & shipping will bee requisite to enclose the sea as aforesaid, and to establish the Right of convoy, fishing & Jurisdiction within the same? And is the Crowne & people of Great Brittaine & Ireland, with all their Colonyes, able to force the same, in case neighboring & Concerned States should not see their Interest in a peaceable complyance with it?

Now to what [degree] our Ambitions & strength [may assist] our endeavour for an absolute Empire, as well as Dominion within this Enclosure, & perhaps consequently over the other circumjacent waters. I will suppose, added to the right of convoy, fishery & Jurisdiction, the Right or Monopoly of Venture & passage Itselfe. Then upon the grounds abovementiond, The Nation of Brittane & Ireland employing 80,000, or quadruple their present number, might receive or earne 3200^{m} per annum for freight. For defence of these vast rights I allow the charge of our Navall power to bee doubled & made 1900^{m}£ per annum (frugally speaking). The which sum [must be] added to wages & victualls of 80,000 men & the charge of the Ware & Tare, Ensurance & Interest of that stock of shipping which they are to manage. It is manifest That nothing but Honour & Glory could bee gotten by the busines, unlesse the profitt of the Trade also arising from the cargoes of all that shipping should also bee added, The Computation whereof is too Unruly a difficulty for this time & place & my abilityes.

Wherefore I shall conclude this Chapter with Intimating That if the Navy of England did consist onely of so many great ships of Strength & of small ships for Swiftnes, as 20^{m} seamen & 10^{m} Land soldiers could manage, & that the rest of the shipping employd about this dominion (beeing of a middle nature) were as many as 15,000 seamen & 15,000 landmen could manage—I humbly conceive that the said force at sea, & 5000 horse at Land, were not onely the greatest defence from foraigne invasion that ever England had, but also the most effectual remedy even of domestic insurrection, when the position & fabrick of the boundary boates, beacons of intelligence, & also the station of the said ships of warre, should be regulated and desciphered, as that may bee. Which matter & the various contrivances belonging to the same requires a particular Essay by itselfe; which may be time enough expressd when there appeare any tendency in earnest towards the reall & Intelligible Dominion of the Seas.

Lastly I adde that 60^{m} employd in the said men-of-war, & 80,000 in the merchant men, both at sea together, with about 60,000 more employed at shoare about what belongs to the said shipping (In all 200,000), may at many other Trades & employments gett 3,200,000£ per annum, the full freight of all the said ships. For that number of men, payd but as laborers, would, at 25£ per annum each, gett 4500^{m}£ per annum.[1]

No. 66

Of the Mare Clausum

A line from Ireland to Scilly, from Scilly to France, from Isle of Wight to France, from Dover to Calais, from Ireland to Scotland, from Scotland to Shetland, from Shetland to Norway, from Norway to Jutland are about 200 Leagues.

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[1] 200,000 men at £25 would earn 5—not 4½ millions.

To keep a watch upon these 7 Lines of 200 Leagues, 200 boates at a league distance are necessary; which need not cost above 20^{m} pounds.

To man each of the said 200 boates with 5 men each will require 1000 men, which at £30 per annum each will bee a charge of 30^{m} pounds per annum.

Besides these watch-boats, there must bee a navall force upon each line *pro re nata*.

An ensurance praemium against enemyes with in the said lines, to bee payd on entering into or going out of the lines.

No Man of War to come within it.

All fishing to pay tribute.

All suits in the Court.

No. 67

OF A MARE CLAUSUM

Such a Mare Clausum as can bee under England's soverainty, is the sea enclosed by 3 lines; viz: The shortest between Scotland and Norway, between Ireland and Scotland, between Ireland and France.

Soverainty in and over the said seas are:—

The right of fishing.
Prisage of sayling.
Jurisdiction.

The same to bee acknowledged by striking to the King's flag within the said Inclosure.

Qre. How to ballance the benefits of the said soverainty with the expence and other evills of mantayning the said 3 lines?

(*Endorsed.* "Mare Clausum. 1687.")

IX

INTEREST

(68) Of Interest—(69) Interest—(70) Of Bankrupts.

INTEREST

THE nature of interest is discussed by Petty in several of his published works. In the *Quantulumcunque* he defines it as " A reward for forbearing the use of your own money for a Term of years agreed upon, whatsoever need yourself may have of it in the mean while " (Hull, 446). He adds that besides the element of ' forbearance,' there is always present in interest that of insurance, and that this premium will vary with the greatness of the risk. Ordinary interest he calls ' Use money ' or ' Usury.' Exchange he describes as ' Local ' usury or interest.

In the *Treatise of Taxes* (1662) he devotes a whole chapter to Usury or the ' Rent of Money,' and its correlatives the rent and price of land, and shows how both are subject to ' Laws of Nature ' which make it impossible to limit them by ordinary law.

The two papers on *Interest* (Nos. 68 and 69) below are directed to this point, the second being in part an answer to the questions propounded in the first. There is no precise indication as to their date, but they would seem to have been written before 1662, for the questions involved having been (as already stated) fully dealt with by Petty in the *Treatise of Taxes,* there would have been no occasion for him to reopen them after that date. These might indeed be the very papers to which he refers when he says he has " spoken elsewhere of the vanity & fruitlessness of making Civil Positive Laws against the Laws of Nature " (*Treatise of Taxes*, Hull, 48).

The Paper *Of Bankrupts,* No. 70, may be explained by a reference to the *Correspondence.* There appear to have been some notable bank failures in the early part of 1683, and on 16th April of that year Southwell writes to Petty: " Lord Waymouth, who is in the Role of your admirers, was wishing he had your thoughts on the great catastrophe of Banquers—whether land will rise, or what may be the most probable consequences thereof." To this Petty replies three days later: " In reference to my Lord Weymouth's questions concerning Bankrupts, I will show you a scheme of a Bankrupt wherein the Lamb may wade and the Elephant may swim." No. 69

seems to be the ‘ Scheme ’ referred to, and shows that Petty was as ready to deal with Bankrupts and Bankruptcies as he was with all other questions of finance. In another paper (*infra*, No. 146) will be found the penalties which, in Petty's view, should be imposed on bankrupts and on other ‘ cheates & frawds.’

No. 68

OF INTEREST

1. Whether Interest (*i.e.*, the annuall rent of mony) ought at all to bee sett higher or lower by law.

2. Whether Interest can be any more regulated than the Rent of lands, prices of goods, or the wages of labour and art.

3. Whether Rent of mony ought to follow the Rent of Land, or vice versa.

4. What difference there ought to bee between the proportion between principall and interest, and the proportion between the value and rent of land; and which greatest.

5. What are the true causes of the difference of Interest in Ireland, England, and Holland; and what the effects as to the publick good of each country.

6. How Law (if unnaturall) concerning Interest, will become also impracticable and elusible.

7. What is the lowest naturall pitch unto which interest of mony can bee brought; and how it may be brought to the same.

Where Banks are interest will be low.

Mony is a Commodity and Token.

Stating interest by a law, is an unequall Tax.

Interest is compounded of forbearance and hazard.

Difference between domestic and universall wealth and Trade.

Price of land is composed of annual rent (land and labour) conveniences, yeares purchase.

Making interest too low is equivalent to forbidding it—There bee better wayes.

Low interest [is] a help to Trade, and so is skill, industry, parsimony, correspondence, practise; But neither of them [is] attainable by a law, *in instante.*

Altering of interest by law is but like altering the value of coynes.

No. 69

INTEREST

1. Interest (or Rent) of mony can bee no more stated by lawes then the Rent of Lands, prices of goods, or the wages of laborers and artisans.

2. The mony at interest in England is but about $\frac{1}{4}$ of the value of exported or imported commodityes; $\frac{1}{10}$ of commodityes yearly consumed; and $\frac{1}{50}$ of the value of the Lands. Wherefore the latter 3 must governe and state interest, and not contrariwise.

3. In Ireland interest [is] at 10 per cent., in England at 6 per cent., in Holland at 4 per cent. [So We] must suppose lands in Ireland worth 10 yeares purchase, in England 16$\frac{2}{3}$, in Holland 25. Which agrees well enough with experience.

4. Where lands are deare and interest low, men are forced to worke upon harder termes than where the case is contrary, and not to leave off worke so soone; which is the onely cause why trade flourishes most in such places.

5. In about 50 yeares (since interest was reduced from 10 to 8) shipping, and consequently foraigne Trade, hath encreased from one to 15—too great an effect of that cause.

6. Encrease of Trade depends chiefly and naturally upon encrease of People and luxury in their consumption, but contingently upon many other causes (as in 4th article).

Conclusion

Suppose *A* did owne all the Lands in England, now worth 150 millions, and *B* did owne all the mony of England, now let at 6 per cent. interest, (beeing 3 millions) and so lett to *C* for 180^{m} per annum. And suppose *B* abating $\frac{1}{3}$ of his interest, and reckoning 4 instead of 6 per cent. to encourage the trading of *C*, and so loose 60^{m} per annum. It were for the advantage of *A*, whose lands will rise from 150 to 225 millions (viz: 75 millions, the interest whereof even at 4 per cent. is 3 millions per annum) to make good unto *B* the 60^{m} which he abated to *C*, and yet gayne 240^{m}[1] per annum by so doing. But these things being absurd it follows &c.

A Question

Suppose of 4 men, one have 100£ worth of land, another have 100£ in mony, a third in shipping, and the 4th in horses.

Q. If the landed man take 5£ per annum for his land, what [will] the 2nd demand for his mony? the 3rd for a yeares freight of his ships? and the 4th for a yeares hire of his horses, above this mark—or a 5th for an howse worth 100£?[2]

If stated interest should not bee worth the hazard, twill prove a damp to trade.

No. 70

OF BANKRUPTS

A person who lives by Trade, that is by buying & selling and by receiving and paying Mony, when hee comes to faile in his payments and abscond himselfe, is called a Bankrupt.

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[1] *Sic*, but Petty means of course 2,400,000. The argument appears to be intended to show *per impossibile* that the rate of interest cannot govern the value of land.

[2] Cf. *Quantulumcunque* (Hull, 448) where the answers to these questions are given, viz., that the land being worth 20 years, houses 12 years, shipping 2 years, and horses 6 months purchase, the annual 'praemium' for lending the same would vary accordingly.

Bankrupts are such as have either spent their Creditors mony vainly and luxuriously, or have lost it by their unskilfulness in Trade and have been cheated, or else have lost it [in] inevitable accidents or the hand of God. Of which sorts distinction is to bee made.

Another sort of Bankrupts is Such as Having gotten men's estates into their hands, do abscond their persons, get into priviledged places & fictitious papers, go beyond the seas & into plantations &c.; And do keep their creditors mony wholly, or use tricks to compound with them for a small part; do buy lands with their creditors mony for their children; make over their effects to their confederates, and have confederate and feyned creditors to stand out against the major part of the creditors when any proposall of satisfaction is on foot.

The Law for remedy of these Evills allowes Commissioners to enquire into the debts & credits of the Bankrupt; to pitch & declare the terme of his first shewing the signes of a Bankrupt, & from thence to make all his sales and conveyances voyd & to bring all his payments into a common stock &c. These Commissioners sit upon the charge of the creditors, are to examine the Bankrupt's books, which are comonly none or very imperfect.

The Things to be done are:

1. To hinder and prevent Traders thus rising into debt above halfe the stock they set up with.
2. To oblige Traders to ascertain their stocks at first and to keep perfect and examinable accompts.
3. To distinguish of Insolvencyes hapning either by:
    (1) Excessive expence.
    (2) Error in Trade or Negotiation.
    (3) Ordinary accidents & mischances.
    (4) The hand of God & Inevitable causes.

4. To prevent a person absconding, priviledge places, fictitious papers, going beyond seas, suppressing or falsifying accompts, confederate and feigned creditors, pretence of Trusts and abusing other men's names, and to lessen the Inconveniences of disapointments in a few with the major part.

5. To manage these matters with speed and small expense to the Creditor.

6. To have such consideration of the Bankrupt as may keep him from despaire and utter ruine.

Remedies

1. That every Trading person do at a certaine time ascertaine his stock, with security that the same is upon.

2. That afterwards accompts bee kept of the time, sum, cause, and names of payer & receiver, on payn of felony.

3. That choses in action[1] and effects out of hands bee valued by candle or auction.

4. That losses by the hand of God bee borne by the Creditor in proportion with the Bankrupt.

5. That proposall of accomodation bee ruled by $\frac{2}{3}$.

6. No absconding, Privledged places, suppressing accounts, bee sufferd.

7. That confederacy with Bankrupts & Coloring their frauds be punished with ——.

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[1] *I.e.*, obligations, as opposed to 'choses in possession' or moveables. Sales by 'inch of candle,' *i.e.*, by auction, in which bids are received so long as a small piece of candle burns, were common at this time.

X

KING JAMES II

(71) Proposalls—(72) Ten tools for making the Crown and State of England more powerful than any other now in Europe—(73) Advantages humbly offered to the King—(74) Employment for W.P. 1686—(75) Fiant—(76) About Alliance with the French—(77) The Interest of England—(78) Of Succession to the English Empire—(79) The Weight of Crowns—(80) Magnalia Regni.

KING JAMES II

AS Judge of the Admiralty Court in Dublin Petty had been in relations with the Duke of York, who seems to have retained the control of Admiralty affairs in Ireland, in spite of the loss (under the provisions of the Test Act) of his position as Lord High Admiral of England. Upon Charles II's death in 1685 Petty immediately returned from Ireland, and lost no time in approaching the new Sovereign. The Southwell correspondence, and other documentary evidence, shows that there were constant interviews at which Petty produced for King James's benefit all his old plans (and some new ones) for reform of Church and State. There is a List among the MS. headed *Matters in Transaction & Discourse since King James the Second his Coronation.* It contains some 40 different proposals, all of which were apparently placed before the King during the first few months of his reign! For the purposes of this section I have picked out a few papers which were evidently addressed to the Sovereign. They are to some extent repetitive, for once a plan had got firmly rooted in Petty's mind he never ceased to urge it, though he did not always bring it forward in the same form.

The *Proposalls* No. 71) for increasing the population of London are dated June 1685, and must therefore have been made immediately after Petty's return to England. This paper is endorsed "Bridge Proposal" and seems to have hinged on the idea of a new bridge over the Thames at Lambeth, though the project in question is barely mentioned.

The "*Ten Tools*" for making the Crown more powerful &c. (No. 72) is dated 1686: most of its proposals reappear in *Advantages humbly offered to the King* (No. 73).

No. 74 is modestly endorsed in Petty's own hand, "*Employment for W.P.* 1686." It contains in brief his plan for getting himself made Accountant General for all the King's Dominions! The same idea is worked out in greater detail in the paper (No. 52) which I have already printed in the chapter devoted more particularly to statistics.

Petty left nothing to chance. In No. 75 will be found a draft order for the preparation of the Commission necessary for his appointment to this new office; while there is another draft—complete in everything except the Royal Signature—of the Commission itself, which from considerations of space has not been printed.

The next paper (No. 76) is something of a new departure, for it advocates an *Alliance with France* our hereditary rival. In the preceding reign the attention of England had been centred on the competition of the Dutch, and Louis XIV, by means of a yearly subsidy to Charles II, had been left free to pursue his plans of French aggrandisement without hindrance. Petty had now discovered that France was not so formidable after all, a thesis to which his published Essays on the Magnitude of London as compared with Paris were more particularly directed. In No. 76 he follows up this line of thought, by showing that under the European conditions then prevailing, France might be compelled to ask for assistance from England, and that this might be afforded to her on condition that she definitely ceded to England the supremacy of the seas

No. 77 sets forth fourteen ways in which the *Interest of England* might be advanced, while No. 78 brings forward the question of the *Succession to the throne* and points out the dangers of allowing this matter to remain unsettled until the King's death.

In August 1687 Petty writes to Southwell: "I gave the King a paper at Windsor intitled the *Weight of the Crown of England* in 20 short articles, more stupendous than what I sent you. I desired the King to pick out of the whole one article which he wished to be true and another that he thinketh to be false, and command me within 24 hours and within one sheet of paper to show him my further thoughts concerning them—all was very well taken but without getting butter to my parsnips or hobnails for my shoes" (*Corr.*, 16th August 1687). No. 79 is the less 'stupendous' paper as sent to Southwell and preserved by him.

No. 80, *Magnalia Regni*, is a summing up of much that has gone before, though it contains some new matter, notably an attack on the Court of Chancery—through whose technicalities Petty had himself been more than once a sufferer. The Paper has fourteen heads, under each of which Petty had some suggestion to make, and its termination shows that more was to follow. It is dated 1687, and Petty's illness and death at the end of that year may well have been the cause why it was never finished.

No. 71

PROPOSALLS

1. Within 25 yeares to encrease the People of London from 2 to 3, and the rest of England from 2 to 4.

2. To provide habitations for the said encrease about London, at the present rates but more comodious.

3. To build a new bridge crossing the Thames about Lambeth.

4. To make the Old present Bridge passable at any time of the Tide either way.

5. To fortify 3000 acres of Land on the South side of the Thames against 40^{m} men (5 to one).

6. To wharfe the Thames from Lambeth to Redriffe.[1]

In consideration of having:

3000 acres of land, as the same yielded the last 20 yeares; and the houseing standing on the same, as it yielded these last 10 yeares.

(*Endorsed.* "Bridge Proposall. June 1685.")

No. 72

TEN TOOLES FOR MAKING THE CROWNE AND STATE OF ENGLAND MORE POWERFULL THAN ANY OTHER NOW IN EUROPE

1. That England and Ireland bee united by one Comon Councill or Parliament, at the Proportion of ten to one, without Testes or Embarasing Oathes.

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[1] Redriff was on the south side of the Thames, east of St. Saviour's Dock and close to Rotherhithe. Rocque's map of London (1746) shows the street now called Bermondsey Wall as then Redriff Wall.

2. That there bee a well grounded liberty of Religion in those Kingdomes, such as may bee depended upon.

3. That the publiq Revenue of the same do never exceed 2600^{m} pounds per annum, nor bee lesse than 1660^{m} pounds; the same to bee better Aplotted than at present.

4. That there bee a Transplantation of Irish soldiers, freeholders, and of the Poore that can speak no English.

5. That there bee a Reformation of the Church Temporalitys, without touching upon Faith, Doctrine, or Discipline thereof.

6. That the present vastenes of London may bee Applyed to Noble Advantages, with care to prevent or lessen the Plague, which threatens to sweep away 140^{m} of the people at its next coming.

7. That an Exact Accompt of the Lands and hands in all his Majesty's Dominions bee forthwith taken, and constantly kept.

8. That there bee a Registory of Land Titles, a Bank of Creditt and A Regulation of Coyne for perpetuity.

9. That the American Collonyes, the East India and Africain Trade, as also a Mare Clausum, may bee considered.

10. That the Encrease of the King's subjects (naturall and civill) may be promoted by soft and practicable meanes; which may bee doubled in the 25 years next to come.

All which may be performed in 5 yeares, with an addition of 100^{m} pounds per annum to his Majesty's present Revenue naturally arising from the same.

No. 73

Advantages humbly offered to the King

1. Probable meanes how to lessen the future Plagues in London by one halfe.

2. To institute 2 Councells (more conduceing to a greatfull monarchy, and superior in Nature to the 2 houses of Peers and Commons) without interfering with either and abrogating the same.

3. To create a Bank upon 8 millions worth of reall and visible security.

4. To double the King's Europaean subjects in 25 yeares with an inconsiderable emprovement.

5. To encrease the Kings present revenue (by a fifth part) by easing and enriching the subjects.

6. To beget a perpetuall peace and Union between the People of England and Ireland.

7. To encrease the Catholiques of England from one to 35 within 5 yeares.

8. To make Politicall Anatomyes, and keep accompts of his Majesties 3 Kingdomes; according to the Index exhibited.

9. To regulate the Churches temporall Concernments without losse to any party.

10. To regulate Coynes, Usury, and Exchange.

11. To save 200 thousand pounds per annum to his Majesty, without lessning his force or splendor.

12. To erect a Registry of Lands, which may [in] effect coyne lands into mony.

It is humbly conceyvd that by the performance of the premisses there will bee gayned:

To the Church	10	750 millions.
To the King	16	
Saved to the King	4	
To the people	720	

The undertakers hereof will raise a stock of 200 thousand pounds, wherewith to begin and carry on the premises, if they have:

12 pence per pound of what shall bee gaynd to the Church.

6 pence per pound of what is gaynd to the King.

3 pence of what is saved.

One peny of what is gaynd to the People in 25 yeares.

No. 74

EMPLOYMENT FOR W.P. 1686

Accomptant generall for all the Lands & People in the King's dominions.

Valuator generall for all Lands, howses, & Tythes in Ireland.

Regulator of coynes in Ireland, as also Licences for selling ale, wine, & spirit.

Commissioner for the Union of the English & Irish people & interests, as also for Relieving the wrongd Irish Catholiques, & Settling the well-affected English in what they hold by the Acts of Settlement & Explanation.

No. 75

FIANT

Our Royall will and pleasure is, that you forthwith prepare a *fiant* in due forme of Law, for Letters Pattents to bee passed unto our trusty and well beloved *A.B.* contayning our grant unto him, his sufficient Deputy & Deputyes, of the full powers & authoritys hereafter mentioned; that is to say—

1. To take the number of all our subjects Inhabitting in every Citty, Town, County, Barrony, hundred, parish, village, & hamlet in all or any of our Dominions

through out the whole world; mentioning the sex, age, Mariage, and widdowhood of each of them,

2. To take an Accompt of all the Birthes, Burialls, Baptisems, & mariages, hapening every yeare, within any of the Divisions above mentioned.

3. To returne of what religion every of our said subjects (Male & female of above 16 yeare old) are or doe professe to bee of, vizt: Roman Catholiques, Protestants of the Church of England, Jews, Socinians, Quakers, Anabaptists, Presbeteryans, Independents, or Newters to any of the 7 said sorts abovementioned.

4. Of what dignity or title any of the aforementioned persons are, vizt: Princes, Dukes, Marqueses, Earles Viscounts, Barrons, Barrinets, Knights, Esquires, Gentlemen or yowmen, & of what Degree in the University or Inns of Court.

5. What offices or Employments, Eclesiasticall, Civill or Millatory, any of them doth bear.

6. And of what quallity they are;—As freeholders, Tertenants, Freemen of Corporations, foraine Merchants, sellers by whole-sale or by retayle, Artisans, handycraft men, Marinors, fisher-men, husbandmen or Laborers.

7. Mentioning who are in any Prison, Workhouse, Colledge or free schole; as also who are Impotent, or live upon publiq almes, or are Comon beggars.

8. Who are absent at sea or in foraine parts, or sick in their beds.

9. Hereby requiring all Arch Bishops, Bishops, Parsons, vicars, curats, Churchwardens, Parish Clerks, and all Mayors, Balliffs, Justices of Peace, Constables, Headbourgh, tything men and Beedles, as also all Lords and stewards of maners, Sheriffs, and their Balliffs, and all persons employed by us in Collecting or managing our duty of Excise & Harths, to be ayding & assisting unto the said *A.B.* &c. by their books, lrtes & papers concerning the premisses; & from time to time, to give unto the said *A.B.* or his Deptyes,

Coppyes & Extracts of all such bookes and papers as they have or ought to have concerning the same.

10. And empowering the said *A.B.* &c. to Abstract, regulate, & methodise all the severall Accompts abovementiond; and to make such observations & Inferences thereupon as to him shall seem meet and usefull for us and our subjects.

11. And the said Accompt bookes, Tables, & observations, to set forth, print, and publish; in bookes & tables generall speciall & particular; in great & small volume; every yeare, month or week,[1] as to him (the said *A.B.* &c.) shall seem most conveniant & useful for our self or subjects, And with power to Lisence the same, onely by such Printers or stacioners as they shall appoint.

12. Strictly forbiding all persons whatsoever besides the said *A.B.* &c. to print or sell the same in great or small volume, or in any other method or forme then what is set forth & made by the said *A.B.* &c.

13. All-wayes provided that our selfe or privy Councill shall & may forbid to bee so published, what they shall expressly declare to bee prejudicall to our service.

14. Hereby allowing to the said *A.B.* the yearly stipend or sallery of —— for his pains and care in and about the premisses, to continue to the said *A.B.* their heyres or Assignes for the space of —— years next after the date hereof.

(*Endorsed.* " Fiant &c.")

No. 76

About Alliance with the French

1. If the King of England have 3 millions paid of revenue, hee may most easily keep up a navall force of about 35 thousand men, in good ships of warre.

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[1] Cf. *Mercurius Londinensis* (No. 59 *supra*).

2. If the Spaniards, Hollander, Hamburger, Dane, Swede and Brandenburger, should forme a Ligue against France, And if the shiping of all those Nations bee about double to what the French have between Ostend & St. Sebastian (for Hee hath other uses in the Mediteranean for his shipping of Marsells and Toulon), then the French must crave assistance from the English 35^{m} men, which the abovementioned Ligue need not do.

3. The English upon this need of the French for their navall force, and the use of their Ports, may reasonably:—

(i) Have 100^{m} familyes of Hugenots with their Estates, to bee planted half in England & half in Ireland.

(ii) Pay for 30^{m} Men at Sea, for 8 or 9 months of the yeare about one million.

(iii) For victualls and Cloathes, for 20^{m} Men who are to serve in the French ships, 200^{m}£.

4. To enable the English still to supply them with all sorts of seamen for their service: [The French]

(i) To quit the America fisherys to the English.

(ii) To ship all their Wines & Salt on English Bottomes.

(iii) Not to bee caryers at Sea even of their owne goods, except in the Mediteranean.

(iv) To build no more Men of warre.

(v) To help the English to all the Ports they can take, between Coppenhagen & Calais.

N.B. The English are onely to fight on Board and not on shoare.

The English

1. must get the Portingalls Interest in the East Indies. Get Hispaniola and Cuba. The Herring busse fishing. The Cariage of Norway Timber & boards.

2. And must keep Peace with Algier, Tunis, Tripoly &c. to bee free for the French Service elsewhere.

3. If the English get the Ports, pay and trade above mentioned, they need not care what the French get at Land, which they want not.

4. Ireland, by transplanting 614^{m} and by admitting 600^{m} English and 250^{m} Hugonots, will bee well enough fixed to the Crowne and Interest of England.

No. 77

THE INTEREST OF ENGLAND

1. Not to seek a foot more of territory.
2. Nor send any Men to help allyes.
3. To give Liberty of Conscience with a *Vox Populi*.
4. To enlarge sea trade & Soverainty of a *Mare Clausum*.
5. To transplant ¾ of the people of Ireland & the north of Scotland.
6. To exchange Jersey & Guernsey.
7. To erect a bank of 8 millions.
8. To reforme the present revenue & Coynes.
9. To exclude all foraine Jurisdiction.
10. Regulate the Church Service & preaching & rewards.
11. To regulate the American Colonyes [as] to Sugar, Tobacco, Indigo, Ginger, Cotton, Cacao, severall woods, & bring away what men are not necessary to these comodityes.
12. To double the people by generation.
13. To make the 134 parishes of London to bee One County, one diocese, one militia.
14. Alliance with France & Denmark.

(*Endorsed.* "The Interest of England. 1687.")

No. 78

Of Succession to the English Empire

The English Empire bee emproved as aforesaid; the continuance thereof is next to bee endeavord, vizt:

1. It must fall to some [of] the Late & present King's naturall sons, being Catholiques, to the discontent of all Protestants & most others.

2. Or to the King's daughter (by an unusuall od marriage, &c.) to the discontent of the papists.

3. Or must bee surprizd by the french Monarch.

4. Must fall into a popular state government, viz: All the 3 Kingdomes into one State; or part into a Protestant State & part (as Ireland) into a papist State.

Qre.: Whether It doth not concerne the King & people, in the King's life time to procure a Settlement in all the points aforementiond. As may bee easily and safely done with or without a State Religion, but not without a full Liberty of Worship or Conscience.

(*Endorsed.* "For Continuance of the Emprovd Empire.")

No. 79

The Weight of Crownes 1687

The greatnes, Force & Wealth of States are computed:

1. By the number of people in generall of under 10 yeares old, of above 70, of teeming women maryd & unmaryd, at —— per head for each sort, & —— yeares purchase.

2. By the value of the encrease of Corne, fruits & Cattle, yearely growing from the Teritory.

3. By the quantity of Coynd mony, plate, and Jewells, Furniture & Merchandize.

4. By the Expence of the people yearly.
5. By the value of goods exported or exchanged with Foraine partes.
6. By the publiq revenue and the part which the same is of the peoples expence.
7. By the charge of ordinary Land & Sea Forces, Forts, and garisons.
8. By the number of Churchmen, as also of Religious Men, Women, and their endowments.
9. By the number of holy days, fasting days, and days of abstinence, & from what meates.
10. By the charge of the Civill Government & contingencies.

According to which Computation wee say:

1. That the Kingdomes of Great Britten & Ireland, and the Dominions thereunto belonging, may within 25 yeares, bee made as great as that of France is now, and probably as the same will bee then.
2. That the said Kingdomes of England &c. are naturally able at this time to defend themselves against the whole power of France derectly bent against them.

No. 80

MAGNALIA REGNI

Survey (1687)

By a perfect Survey of the Lands in hands within his Majesties Europian Dominions, It will probably be found as followeth, vizt:

1. That in England & Wales, and in the Islands of Jearsy, Garnsey & Man, There are 36 milions of Acres worth 11 millions per annum and at 20 yeares purchase	£220 millions
2. That there live upon the said	

Lands 7100^{m} people, worth at 90£ per head	£639 millions
3. The Lands of Ireland are neare 18 millions of English acres, worth (in this yeare 1687) scarce one million per annum: & scarce 10 yeares purchase; In all scarce	10 millions
4. There Live in Ireland 1300^{m}: which at 70£ per head, are worth	91 millions
5. There are in Scotland 18 millions of Acres, worth 900^{m} pound per annum and 20 yeares purchase, vizt:	18 millions
6. There are in Scotland 1300^{m} people worth, like those in Ireland,	91 millions
	1069 millions

Of the Transplantation

Now Supposing that of the 18 millions of acres in Scotland, the northermost 6 millions to be worth but 200^{m} per annum and the rest 700^{m} per annum; And that in the said Northernmost third there live 400^{m} people and in the rest 900^{m}. When there is a Transplantation of 300^{m} out of the Highlands into the Lowlands, making in all 1200^{m}; and when there is a Transplantation of one million out of Ireland into England, making the 7100^{m} to be 8100^{m}, and the 8 millions [people] in England, & the Lowlands of Scotland, to be 9300^{m}. Then the price of the said Lands in England, Wales and the Lowlands of Scotland, will rise from 6400 to 8649:

Now the Lands of England were valued at 220 millions, and the Lowlands of Scotland at 14 millions, in all at 234 millions: the third part whereof is 78 millions [which is] the gaine, by this Transplantation upon the Lands alone.

Moreover the million of Transplantees out of Ireland, and the whole 1300^{m} of Scotland (in all 2300^{m}) will rise

20£ per head in value which makes 46 millions; Which with the 78 millions improvement upon the Lands, makes 84[1] millions of benefitt in the whole.

Besides 1500^{m} per annum which will come out of Ireland into England, & 300^{m}£ which may come out of the Highlands into the Lowlands of Scotland, which at 20 yeares purchase will be 36 millions, and makes a benefitt in the whole of 120 millions.

And will Lessen the Charge of the government 500^{m}£ per annum, worth 10 millions more—in all 140 millions, or 100£ per head of advantage, for every transplanted person.[2]

Of the Comon Counsill

1. The 48 millions of Land in England, Wales, the Lower 2 thirds of Scotland, may be easily divided into 15 thousand parrishes or parochial divisions, onely by cutting soe many of the greater present parrishes into halves, as the present number of parrishes (in the said 48 millions) is short of the said 15 thousand.

2. There being now 15^{m} such Divisions, Lett them make assemblyes of thirty each to choose 500 members for this Common Councill; all the men of 21 yeares old, having votes in the parrochiall Divisions, wherein there may be perhapps about 150 in each. Soe as the parochiall Divisions will Choose Electors in one day; 30 whereof meeting in some convenient place the next day, and the whole at 500 places, there will be choosen upon the second day the Common Councill propounded without confusion, uncertainty, or delay, to represent all the men of 21 yeares old, which are in 9 millions 300^{m} people:

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[1] The figure, if correctly added, would be 124 millions.

[2] Petty's calculations in the foregoing paper seem totally unintelligible. He was evidently carried away by his enthusiasm for the great project of 'Transplantation.'

Of Doubling the People in 25 *Yeares*[1]

1. Itt hath been showen that if all, or near all, the teeming women aged betwen 18 and 44 years old, were married & did beare a Child in every 2 yeares & a halfe, that the work here propounded will be efectually done.

2. Now though there be in efect 112 males for 651 females, yett it is found by observation that but between 30 & 40 of the teeming women are att present married, by reason the prolifick people are afraid they shall not be able to maintaine the Children they shall begett. Now if there be 72 millions of Statute acres in Great Brittan & Ireland & the adjacent Islands above named, Then when the propounded number of 9300^{m} are doubled, there will be neare 4 acres of Land to every head, which with moderate Labour will afoord necessarys unto them. And Consequently if there be a suficiency wherewith to maintaine the Double, It is meere mismanagement if there be not a suficiency to maintaine lesser numbers.

3. Wherefore—leaving itt to God to punish the sin of women who become with Child against his Comandments, and leaving it to the world to punish such women with Contempt & Dirision, & leaving it to the women themselves to suffer for their folly in not oblidging the men they deale with to provide for their Children,—Lett the Goverment in humanity make provision for every woman with Child for 30 days, the woman leaving her Child to be a servant to the Government for 25 yeares, suppressing the names of their parents.

4. The Charge of maintaining a woman 30 dayes in Child bed may well be defrayed for under 30 shillings; but if the value of mankind be in this age & Country 70£ per head, a new born Child, bread up to fair hard work for 25 yeares, will be very well worth 3 times 30 Shillings, as may be seen in the price of Negros Children in the American plantations.

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[1] Cf. *On Doubling the People* (1687), No. 95 *infra.*

Of Military Force

1. Of 9300^{m} people (planted as aforesaid) the quarter or 2325^{m} will be males of betwen 16 and 60 yeares old, naturally able to beare Armes, and one 10th of the said number (or 232^{m}) will be every wayes verry fitt for that Service, or at least 200^{m}, which we will suppose to be the Standing Militia of the Nation, to be drawn forth onely upon fforeign Invasions or other great extremityes.

2. Moreover wee suppose a 10th part of the said 200^{m} may be suficient for a Moveing Mercenary Army, and that $\frac{1}{10}$ of the last mentiond 20^{m} may be suficient for the Royall guards.[1]

Of the Navie

The Governors of the Navie & Navall Afaires ought to take account:

1. Of the number of the Seamen, fishermen or watermen, and of their families residing within the King's Dominions.

2. Of the number of Ships belonging to private men, of above 600 Tun in Burden, of other Ships carring between 6 and 500 Tunn, of others between 5 & 4, between 4 & 3, and of between 3 & 2, & between 2 & 1; as alsoe of 4 score Tuns, threescore, forty, 25, 12, & Under.

3. They are to take account of all money receaved for freight by the owners of all the said Shiping.

4. They are to procure the like account for all neighbouring States.

5. They are to find out which of the said Shiping are excellent Sailers.

6. To determine what sort & number & seises of Shiping will make a peculiar Navie.

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[1] *Cf.* No. 1, 'The Three Armies.'

Of a Mare Clausum[1]

1. As to this matter we suppose an Aliance between ffrance & Denmark.

2. We Suppose vessells may be made to be moared anywhere in the Sea with ancors or Drift Sayles, to live in all wethers, to be fitted with signalls of flaggs in the day, and with fires in the night time; soe as thereby to give notice to one another of what is necessary, And particularly of any Ship that passes by them either by night or day.

3. We Suppose that a Row of those vessells placed at about a League distance should be put between the north of Ireland, & the next Land of Scotland, and that another Row should be put from the Old Head of Kingseale to one of the Scilly Islands. Which two lines will make a *Mare Clausum* properly belonging to the King of England.

The other *Mare Clausum* is made by the like Row of watch Boates put between Scilly and the next Land of ffrance, with another Row between the North of Scotland & the next Lands of Norway. This Inclosuer is to Terminate at the Straight between Ellsinor and Croninburg. There may be other Rows as between the Isle of Weight and Cape Lehague, as alsoe between Dover and the next convenient Land belonging to ffrance.

4. All those Rows may be made with 200 watch boates, which at a 100£ each will amount to 20^{m} pounds.

5. Those 200 boates are to be Maned with 2 thousand men; which at 20£ each, amounts to 40^{m} pound per annum.

6. Those men may be Condemned Malefactors or such other Lewd, Idle, wagabond persons, as are now usually sent to the houses of Correction. And they may be imployed in knitting Stocking, netts &c, and in severall other Convenient Manufactures.

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[1] *Cf.* Nos. 65, 66, and 67 *supra*.

7. The use of this Inclosuer is to hinder the Danes, Swedes, and Ham-Burgers, Jutlanders, and fflemings, from Trading into Rusha, or Greenland, into Asia, Africa and America; as alsoe into the Northern parts of ffrance; as alsoe into Spane, Italy, & Turkey.

8. And it is to be understood That every ffrench and Dayne shall be limited to the Shiping and Sea Trade which they shall use within this Inclosuer, but without it to be ffree.

9. Now the use of the English Navie will be (1st) to keep some great Ships, with great gunes, for extraordinary Service & for the State & honor of the nation. (2dly) To have a peculiar sort of vesells for the guard of Ports. (3dly) To have another sort of vessell which may be of Great strength & that may carry Great Guns, but draw little watter, to act upon the Coast of our Neighbours. (4thly) To have Vessells eminently fitted for sayling and ofence, to be Convoys for our Trade.

Of a Banck & Coyns

1. The Rent of the 48 millions acres[1] peopled as aforsaid, will be about 14 millions per annum, The halfe whereof is 7 millions. The yearly expence of 9300^{m} people will be 62 millions, and the weekly expence will be about 1200^{m}, and the Currant Stock for fforeign Trade will be 4 millions. In all about 12 millions, which is the Sum necessary to drive the Trade of our new Nation.

2. Now the Ground Rents within the City of London, or Parrishes within the Bills of Mortality, are worth 8 millions of Money, and—by a peculiar Contrivance elsewhere described—may be Coyned into better Mony than that of gold, & Silver, And the profitts thereof divided between the King and the owners of the said ground Rents.

3. As to the other 4 millions itt may be made of

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[1] *I.e.*, 36 millions in England and 12 millions in the lowlands of Scotland (as in first and second articles).

gould, silver, Copper & Tin, into pieces all of the same weight & circumference, difering onely in Thickness, of a less expensive Coynage [than] the present, gaurded against all abuses, and fitt for accounts in Deccimall Arithmetick.[1]

Of Ingrossing Trade

The principall point of Ingrossing Trade, is (1) to take away the Trade of freight, fishing, and East India Comoditys from the Hollanders, which they possess: (1) by having a Banck Account, (2) by giving Liberty of Religion, and (3) by making the Customs, or dutyes upon fforeign Trade verry easy. But now when the Liberty of Religion granted by the King is secure to perpetuity, when a Bank of 8 millions that the King cannot seise shall be Established, and when the Customes shall be reduced to $\frac{1}{5}$ of what they are at present, when the *Mare Clausum* shall be instituted & gaurded as aforesaid, when we shall have a firm aliance with ffrance & Denmark—Then certainly England, whose wealth & strength is to that of the United provinces, as 13 to 4, will be able to Compass the Trades above mentioned.

Of the Publick Revenues

We pitch upon the publick Revenue to be 2 millions 678$^{\text{m}}$ pound for the following reasons, vizt:

1. Because it is near about $\frac{1}{24}$ part of the peoples Expence, which we have Estimated att 62 millions.

2. $\frac{1}{24}$ part is raised by Retrenching one farthing in the Shilling of Expence, and by working one quarter of a hour, which is $\frac{1}{48}$ part of 12 hours more then ordinary; either and both which are not sensible, much less intolerable.

3. The necessary expence of the Kings Dominions in time of peace, need not be above 1568$^{\text{m}}$£ per annum,

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[1] *I.e.*, a decimal coinage.

for it hath been actually defrayed for halfe that sum. Wherefore the said Revenue, defraying the said Charge, will give an overplus of 1108^{m}£ per annum,[1] which for 3 years of grace [? peace] (for soe many have been observed to be for one yeare of warr) will make a superlucration[2] of 3324^{m}£, which added to the Revenue of 2676^{m} pound, will make a stock or provision for the yeare of warr of 6 millions, or triple to any that hath been known. And the King may instead of being a Continuall Borrower as heretofore, be a Lender upon good security and easy intrest of above 3 millions.

If itt be asked how this 2676^{m} pound shall be aplotted. I venture to say as things yett stand, England should beare 2250^{m}£ thereof, and Ireland not above 250^{m} pounds, Scotland 166^{m}, and the Islands of Man, Gersey and Garnesey the Remaining 10^{m} pound.

But after the Transplantation above mentioned England, Wales, the Lower 2 thirds of Scotland, with the Islands of Man, Gersey, and Garnsey, should pay 2 millions & a halfe; Ireland when reformed 140^{m}£, and the Northermost 3d. part of Scotland 36^{m} pound.

If you ask how the 2 millions & $\frac{1}{2}$ should be aplotted upon England &c. I answer: by Charging 700^{m}£ per annum upon the Land Rents as the $\frac{1}{20}$ part thereof; 900^{m} upon persons, Titles, Trades, Ofices, and perhaps Religion of the people; 200^{m}£ onely upon fforeign Comerce, and the Remaining 700^{m}£ to be equally Charged upon the personall Estate and as an Excise upon Luxurious Consumptions.

Liberty of Conscience

There is in truth noe Liberty of Science, Conscience, faith or beliefe, the same being all as necessary as fire burneth, or that a stone will fall downwards;[3] but there is vulguarly speaking a Liberty in worshiping God, & in professing opinions Concerning the Same.

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[1] *I.e.*, £2,678,000 less £1,568,000 = £1,110,000.

[2] *I.e.*, saving.

[3] *I.e.*, that men cannot believe what they please, but only what their reason prompts them to believe.

Wherefore he that would be indulged must sett down in writing what are the points he would be indulged for, and that he believeth the worship and profession hee would be allowed in doe very much conduce to the good of his Soul here and his Salvation hereafter; without obtruding Humour, Caprice and Sinister ends upon the Magistrate, as tenderness of Conscience.

This Liberty must be confined to spirituall matters: that is to say to the nature and atributes of God in the glory of the Trenity, To Angells good & bad, to Devills, to the Soulls of man & beast, to rewards & punishments after this Life in inaccessable places, Imence Times and Spaces, The Transformation of Substances &c. But not to Life, Limb, Liberty, Estates, or marriges, nor to any thing that the Councill above mentioned shall judge Inconsistent with the grace & the publick wellfare of the people.

Of the Court of Chancery

In Chancery one single person (under the notion of keeping the King's Conscience and who perhaps hath litle Skill in the Laws, nor of great Experiance in humane afairs, but perhaps much subject to personall passion & particular apilities) reverseth what hath been Concluded upon by 3 or 4 Learned Judges after the Long debates of Learned Lawyers. That which is peculiar in the Chancery is that the Testimonys of absent persons may be ofered to the Court in writing, and that the Complanant by his Bill may search the Conscience & verascity of the Defendant, & may alsoe judge whether the pretended Impediments of men's performances proceeded directly from the hand of God.

Now that which is peculiarly usefull in Chancery may bee easily performed by any other Court. And therefore this Court or all the rest may be Taken away, and the nation may well enough subsist with one

Court which shall only Try pleas of the Crown, another onely Try Titles of Land and what is afixed to the same, another what concerns persons & personall Estates. Another for the speedy dispatch of Merchants, and fforeigners, and another for ending of Controversy in very small matters, where the thing contended for is less then the Charge of Bringing a Cause to an end in any of the other Courts.

Of the Plague[1]

It is found by Experience that in the Last hundred yeares, that a plague hath happened in London, every 20 yeares at a medium, and each plague hath swept away about $\frac{1}{5}$ part of the whole people; & consequently that the next plague, which seems not to be far of, will take away 140$^{\text{m}}$ lives. And the onely Remidy for preventing the spreading of a plague is killing of Dogs and Catts, making of great fires in the streets, and the shutting up of infected persons within their own houses. Nor doth the pleague usually cease till all those meanes are layed aside.

Now Consider whether in any man's Experience and within any scope of ground in England, wherein there lives as many people as doe now live in London, that the like number, or proportion have dyed of the plague & within the same time, as in London. If not, it is manifest, that the thicker cohabitation of the people in London, doth evidently promote this desease.

The value of 140$^{\text{m}}$ people at 90£ per head is 12 millions 600$^{\text{m}}$ pounds; soe as the Question seems to be what sum of money, and Meanes ought to be prudently ventured for the probable cutting off 3 fifths of this Calamity.

Of Seales & Presedences

Before printing was invented, Bookes were verry Deare & therfore few people learned to read But such as could make a living by itt; and Consequently verry few could write their names. For want whereof every body had Seales, some very simple and grose and others engraven with Coates of Armes; of all which the Herralds kept a Registry. But now allmost every man can write, and many soe dextriously as to counterfiet any other man's writing or signiture; and peculiar Seales are allmost quite neglected, neither is any Registry kept of them. Moreover the Sacred esteem of oaths, is allsoe much Lessened; soe as neither signiture, Seale, nor oath, are suficient profe for any Deed or Instrument, nor in 9 Cases of 10 is there any clear Rule for Presedences. Wherefore it is humbly offered to Consideration, (1) that every man of 21 years old, may have a Seale cutt or stampt, by the work of a Curious Artist, (2) that every seale before it be used, be Registered with some Common oficer or herrald, who is to enter the time when the Seale was brought him; the age, Dwelling place, & Carracters of said person whose seale it is.

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[1] *Cf.* Nos. 14, 15, and 16 *supra.*

As for Dukes, Marcases, Earlls, vicounts, Barron, Barronett, & Knights, their presedences are easily known, and the fountain of those honors is the King. Now it is to be wished that the Common Councill aforementiond may determine who shall be called Esquires and who Gentlemen, and that the Asemblyes of 30 may determine all other precedences; And that every man of 21 yeares old, who chooses an Elector may enter his Seale to be kept by the Elector, & each whereof is to attend the Assises with the entry of all his Seales, for the better profe of such deeds as shall be produced.

Moreover some certaine writtings ought to be Registered word for words. Of others the Register may take such notes, as to distinguish the Genuine Deeds from what is spurious & Counterfeit, without knowing the Contents of the same.

The meanest Seales must be aforded for a peny in Brass.

The next Section shall containe the Particulars following, vizt:

1. Provision for Impotents and for other Sorts of poor.[1]
2. Remidyes against Idleness and small wrongs.
3. Imprisonment for Severall purposes.[2]
4. Hyghways, and Land-Carriages.
5. Post Travelling & Post Letters.[3]
6. Hospitalls & Schoolles of Medicine.
7. Academyes for Mathematicall, Naturall & Mecanicall arts & Sciences, grounded upon Experiences.[4]
8. Academyes of Musick, Sceanes, & Exercises of use, orniment, & pleasure.
9. A Stock of Materialls for Politicall Arithmetick; with the art of Reducing & stating all propositions & questions in terms of number, weight, and measure, & at last into numbers, soe as to make them Demonstrable.

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[1] *Cf.* No. 145.
[2] *Cf.* No. 146.
[3] *Cf.* No. 140.
[4] *Cf.* No. 85.

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